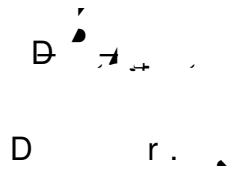


o  
U<sub>r</sub> or  
w Z<sub>r</sub> ron  
Z<sub>r</sub> o  
E Z<sub>r</sub> Z<sub>r</sub> r Z<sub>r</sub> o r  
Z<sub>r</sub> Z<sub>r</sub> o Z<sub>r</sub> U r Z<sub>r</sub>

# Practices of Collaboration in Writing and Their Support

Eevi Elisabeth Beck

University of Sussex



r  $\leftarrow$   $\bar{z}$   $\bar{z}$   $\bar{z}$  no n u  $\leftarrow$  r n  $\bar{z}$  or  $\leftarrow$  r n or o  
or  $\bar{z}$  o r u n r or  $\bar{z}$  r -

E E B





# ACKNOWLEDGMENTS

---

Fr. Z. or o. Z. x r. r. Z. U. or. Z. or o. p. Z. p. Z. n. Z.  
U. Z. U. Z. ow. p. Z. p. Z. n. Z. U. r. Z. Z. o.  
D. p. or. w. r. n. Z. n. on. n. n. n. U. on. n. p. r. w. or. U.  
on. n. U. o. on. r. U. n. Z. Z. o. U. n. o. -

r. Z. p. op. w. o. ro. U. x. Z. p. o. r. own. w. or. Z. U. n. xp. n. r. n. n.  
pro. Z. Z. r. Z. on. Z. r. U. Z. pon. Z. w. Z. w. Z. r. n. w. Z. wor. n. n. U.  
A. U. B. Z. ow. B. Z. n. Z. Z. Y. onn. o. r. Z. Z. An.

Zn Zn on o<sup>u</sup> r w r C Zn oo Zn o C Zn pon Zn or Zn Zn Zn Zn Zn  
Zn<sup>u</sup> Zn or or or n ew w o Zn Zn Broo o p n Zn x n Zn o r p  
n Ur Ur n Zn r 7 o<sup>u</sup> pr n Ar Zn Zn Ey rr Zn r r n or  
Zn Zn o D Zn Zn Co Zn p o m Zn Zn p n -

Zn Zn wo Up r or n r Zn Zn n r o r p o o D p Zn n o  
Co p<sup>u</sup> r n o Zn Zn Zn n n Zn oo o Co n Zn Co p<sup>u</sup> n  
n Zn n r o<sup>u</sup> x Zn p - Zn r Zn<sup>u</sup> p o or n o<sup>u</sup> Zn n  
o w<sup>u</sup> n Zn oo Zn op w Zn r Zn n r n Zn o or  
n r o<sup>u</sup> n or Zn Zn r Zn r on Co p<sup>u</sup> r Zn r n or p n pr p Zn  
Ur Zn Zn<sup>u</sup> or p<sup>u</sup> Zn on pr n Zn on Zn no Zn or n  
p Zn Zn p Zn n w n p r on Zn<sup>u</sup> Zn o r w n

F n Zn Zn wor w Zn Up por Zn e or Zn r Zn ro n or w Zn  
Zn Co<sup>u</sup> n or n Zn n<sup>u</sup> r Zn Zn Zn Zn ro or w Zn Zn  
E<sup>u</sup> Zn on Zn o Zn F<sup>u</sup> Zn r Zn Zn<sup>u</sup> n Aw Zn or p Zn Zn Zn  
X roy C Zn r E<sup>u</sup> ro A C<sup>u</sup> n n m p pro r Zn

F n Zn n ow Zn r o Zn n w o n<sup>u</sup> n on wor ow r  
nn<sup>u</sup> r Zn<sup>u</sup> on Zn n Zn Zn Zn p Zn r r Zn w Zn no  
n on Zn no r Zn Zn on Zn o<sup>u</sup> o n<sup>u</sup> n Zn n pr Zn on o  
o<sup>u</sup> Zn o<sup>u</sup>

# CHAPTER HEADINGS

---

Chapter 1. Introduction to Thesis.....	1
Chapter 2. Background.....	11
Chapter 3. Method.....	50
Chapter 4. A Search for Structure: Preliminary Investigations .....	67
Chapter 5. Asking How They Do It: a Survey .....	81
Chapter 6. Turning to Case Studies: an Initial Analysis .....	108
Chapter 7. Looking at the Detail: a Further Analysis of the Case Studies.....	122
Chapter 8. Informed Opportunism, and Documenting Changes .....	135
Chapter 9. Discussion: Supporting an Unpredictable Process?.....	140
Chapter 10. Conclusions .....	161



# TABLE OF CONTENTS

---

Summary .....	i
Acknowledgments.....	ii
Chapter Headings.....	iv
Table of Contents .....	v
List of Tables .....	ix
List of Figures.....	ix
<b>Chapter 1. Introduction to Thesis.....</b>	<b>1</b>
-- Compo o r u p p o r	
-- u r p o o	
--- Appo r	
--- o u o n o p u r u p p o r o r u r u o m o r	
--- w r n	
-- u o o n r u o n	
--- o o o o n r u o n	
--- An o o o u o n r u o n	7
--- r o n o	
<b>Chapter 2. Background.....</b>	<b>11</b>
--- n r o u o n	
--- Con r n o o n r u o n o C C	
--- r n o o n	
--- r w o o r	
--- C C o o p n o o o	
--- o o n o n n C C	
--- p o r o r u r n n n r n o r C C	
--- n r o u o w o n o p p o r o r o u r u	
--- o m o r w r n	
--- n w o n o n o p o r u p p o r	
--- o p p o r	
--- o n p o o m o r o n o r n o n o n	
--- o m o r o n	
--- o o r n	
--- o o n	
--- o n o m o r w r n	
--- p o r o n o o r o r p o r	
--- r o r o o p o n o n	7
--- o o o o w r n	
--- Compo o r u p p o r w r n o o o p o o	
--- Co n o n o n o p p o r	
--- Exp r n o w r n o	
--- Co p u r o u p p o r o m o r w r n	

-- nro u on	7
-- oo n z w o pro	
-- ow z n r u ou z or z on n wr n roUp	
-- u z z z xp r n z o	
-- u z z z no r z o	
-- E no o o o	
-- roUp or	
-- z on o no o o z roUp or or	
-- purpo	7
-- roUp o o z z n o u n r u o z or n	
-- o n z on n	
-- o z or o u	
-- r wo n z on	
-- u z o z r	

**Chapter 3. Method.....50**

-- nro u on	
-- oo n z w o pro	
-- ow z n r u ou z or z on n wr n roUp	
-- u z z z xp r n z o	
-- u z z z no r z o	
-- E no o o o	
-- roUp or	
-- z on o no o o z roUp or or	
-- purpo	7
-- roUp o o z z n o u n r u o z or n	
-- o n z on n	
-- o z or o u	
-- r wo n z on	
-- u z o z r	

**Chapter 4. A Search for Structure: Preliminary Investigations ..... 67**

-- nro u on	7
-- on z no z on o z oo	
-- D n z p z p z	
-- roUp wor	7
-- An z z n n	7
-- D u on	7
-- or o wr n n ou z or z on u ur n r w	7
-- D n z p z p z	7
-- D z a ou on z z z	7
-- F n n z u on	7
-- D u on	77
-- oo n or u ur n non z o u z p o ou z or z	
-- wr n z n z r z wor	77
-- u z o z r	

**Chapter 5. Asking How They Do It: a Survey ..... 81**

-- nro u on	
-- o z ur z n	
-- F n n	
-- Do u n	
-- r z z on o wor	7
-- p no non o roUp	
-- r n z on	
-- D u on o r u	
-- roUp u on	
-- r z z on o wor	
-- n r z z z on	
-- z u	
-- z on o r u	
-- p z on	
-- p z on or z n	
-- urn n qu on roUp p z on or propo	
-- r z wor	
-- u z o z r	



<b>Chapter 10. Conclusions</b> .....	<b>161</b>
. . . u z o . . .	
. . . Con u on . . .	
. . . FU r wor . . .	
<b>Bibliography</b> .....	<b>166</b>
<b>List of Appendices</b> .....	<b>174</b>





# CHAPTER 1. INTRODUCTION TO THESIS

---

## 1.1. Collaborative writing in academia and its computer support

... r... op n... o o U... n... on... no... n... r... r... or or  
Z... p... o... o U... n... z... ro... z... - n... z... z... o... n... n... z... or  
n... z... p... wor... w... ou... z... U... w... o... z... w... r... z... - p... ou... z... or... z... on... e... U... n... w...  
- U... n... r... z... n... / / / z... o... z... or... o... z... e... U... n... z... r... U... - o... r... z... w...  
z... z... z... - U... / o... U... n... on... no... n... r... o... U... n... on... z... - z... z... n... o...  
wr... n... z... - Co... p... U... r... on... n... e... r... n... z... on... z... z... - n... rn... z... on... z... n... wor... o... U... - p... o... n... z...  
p... U... wor... n... z... - n... - U... U... p... U... n... - r... z... - w... z... n... - o... o... p... U... r... z...  
o... w... z... oo... / p... U... p... ou... z... or... z... wr... n... -

o... U... oo... z... n... U... ow... r... U... n... / z... U... ow... w... / z... n... o... U... p... por...  
wor... z... ou... z... or... z... n... z... U... or... z... U... z... - e... / z... / z... / pro... / pr... n... n...  
U... o... ou... z... or... z... wr... n... z... on... z... z... - w... o... U... on... pro... o... wr... n... o... r...  
o... r... z... n... - z... U... o... ou... z... or... z... on... z... on... z... U... or... z... p... z... o... r... or... n... z... wor...  
z... n... p... on... or... n... q... U... r... ow... pro... xp... r... n... / - o... z... U... or...  
/ - ro... z... - n... n... o... U... o... wor... p... r... or... n... or... z... n... z... - oo... r... n... z... n... r... wr... n...  
w... n... z... n... p... z... z... p... z... -

n... r... n... U... n... - r... z... n... ou... z... or... z... wr... n... o... ro... z... n... p... r... p... - A... on... y... r...  
wr... r... / Br... U... - z... U... z... wr... n... z... - r... z... n... z... n... r... n... / ou... z... or... z... z... n...  
w... n... p... r... or... / z... n... - U... z... on... r... ow... n... An... o... r... y... r... - n... on... n... o... z... / z...  
on... / z... n... w... p... op... o... r... z... / z... / U... z... n... o... U... / z... n... z... n... p... o... z...  
- e... U... n... n... y... z... p... / r... B... - U... n... z... - / on... - z... / z... pro... o... p...

u pr n o z r z on o z or z wr n z z n n  
o o w z ow z n r o n z on-

n r o z r z pr n y on w z o z or z wr n



n / p q z z pr z u z ro u on r z n z n ro u  
u z n on r u o

An z o u o ow z n r z n o r z wor z  
u z n z o u n on u u z z z u z z on r u on o  
r z

### 1.2.1. Approach

po n Z z Z n U , ro Z n n n n prz on r o ow Z or Z wr n  
Z o o o o n - r Z ow r Z z p o r Z o  
Up r Z n w Z u

on  $\mathbb{Z}$ ,  $w$ ,  $n$  or  $\mathbb{Z}$  on  $w$ ,  $\mathbb{Z}$  o  $\mathbb{Z}$  or or  $\mathbb{Z}$   $\mathbb{Z}$   $n$ , or  $\mathbb{Z}$  p  $\mathbb{Z}$  on  $w$  r

o o o z on r u on u z n op n p n q u r n o wor o wr n  
o r o n z p o r u o z or z wr n z n r n z an o  
C C u n on o z o n z on o z pro z r z u z o n n on  
z p n z r z r n r n or u r z n o z or z wr n z r  
u r z n z ow z r z z n o z n on z u p on u r n u y n  
u n n o z n

An z on r u on ro u u r z n p on r z n pro o p w z o  
or z n z on p u z n p r n x p r n n wor o o z or z wr n  
w z p z on or ow n r o C C z pro z r z n p z u z  
z o z p on r o p z z r z o n z u z n o z o  
p z p z n u or y z p wr n z n u on o r z on on  
z or o n z o r on u wor n z ow u r z n z  
z on u on o wr n z -

n x wo on pr n on r u on o u n z o n or z

### 1.3.1. Methodological contribution

Co z or z wr n z o p x p no no n A w u ow r z n z

z p z on u z on r u on o op n o o n z z  
z p or y z p o pr n z on o z r z ro u n z p r z  
Fu r or ro u z p z z r n pr z o o z or z on n wr n  
pro y z p o w z n o z z z z r ro u r n o  
r o r n u r z n ro o z n n z on n o o p u r  
n no r u z p u u wor n n z z z  
n r n z por z o r z z z z q u on on n u o z r  
u z p o z u r o o p r p o o z u or  
r z no ow r ro u n z p r n p o n o p op own xp r n  
z z u no or y z p p no no z p on n z  
o z on or p z n z n on o wr r xp r n o pro z  
r z o ow p op o o u o p u r n r z n w z z n o  
r z op n o z o z n q u on ro u z r o  
u z z on

n-o u z pro p u r o r - u n r w z  
ur pro z n u r o p n r o p r z o z u or n z n n z o o  
u p n u z z o r pro y z p o n p z on w z n r z w n  
ro u u z -

o r z q u on z propo r o u o u w r z u n  
r o z o z on r o p u o w r or  
r n u o r z n n o or n z q u on u u n p o n n o  
p o n z z z or r z o o u on F u r o r z z z o w o r z on p  
z on n n z propo B n z r z on r o z n o u z z  
n n n o on o p p u o r

z u z nro u z pon rā wor ro z r z p p o  
z u n z n z z o z r z z rā wor ow r pro  
nā q u z n r o p n o u p z w z wor o z or e n z z n r  
z z o o r n z n r wor r u z q u on

... own wor- C ... r. w ... p ... o ... n ... n ... B ... - An ...  
o ... z ... u ... o ... r ... on ... n ... p ... n ... B ...  
B ... on ... o ... r ... p ... o ... z ... u ... o ... on ...  
o ... p ... z ... n ... B ... or ... o ... n ... C ... r ... z ... on ... wo ... p ... z ... on ... o ...  
z ... or ... o ... r ... o ... n ... p ... z ... or ... B ... z ... o ... r ... or ... u ... z ... r ... n ... r ... z ...  
q ... on ... z ... w ... z ... no ... on ... o ... n ... or ... oppo ... r ... z ... z ... u ... z ... on ... o ... on ... n ...  
r ... r ... z ... q ... on ... z ... p ... z ... n ... on ... z ... n ... z ... r ... o ... z ...  
q ... on ... o ... u ... z ... n ... or ... oppo ... r ... on ... o ... on ... p ... propo ... n ... z ... r ...  
- Fu ... r ... or ... or ... u ... o ... wor ... n ... op ... n ... p ... n ... p ... z ... on ... n ...  
z ... p ... z ... r ... on ... z ... o ... n ... n ... o ... o ... z ... z ... p ... z ... n ... n ... p ... z ... on ... n ...  
- on ... r ... o ... p ... r ... o ... u ... p ... z ... on ... z ... pro ... w ... n ... z ... r ... z ... r ... z ...  
Cop ... o ... p ... z ... on ... z ... z ... n ... on ... n ... z ... n ... u ... n ... z ... p ... n ... B ...

**Conventions of presentation**

... u ... n ... q ... or ... wor ... w ... z ... n ... u ... w ... o ... a ... - z ... p ... z ...  
z ... wor ... z ... z ... o ... u ... or ... z ... n ... xpr ... on ... Do ... u ... q ... urro ... wor ... z ... n ... n ...  
z ... n ... ro ... w ... r ... w ... r ... q ... ro ... r ... z ... or ... n ... z ... r ... n ... orrow ... u ...  
z ... o ... ro ... pr ... z ... z ... n ... q ... ro ... r ... z ... r ... p ... o ... on ... r ... z ... on ... r ... z ... n ... z ...  
z ... z ... p ... o ... z ... n ... z ... 7 ... 7 ... z ... 7 ... q ... - 7 ... o ... z ... - 7 ... 7 ...  
z ... u ... o ... - 7 ... 7 ... - 7 ... z ...  
w ... z ... po ... 7 ... n ...  
n ... o ... z ... 7 ... wor ... 7 ... n ... z ...  
z ... p ... o ... 7 ... 7 ... or ... z ...



# CHAPTER 2. BACKGROUND

---

## 2.1. Introduction

work in the area of... on... Co p u r...  
Co p u r U p p o r or Coop r... or Co p u r U p p o r or  
Co m m o n o r C C... p r o... o... r o u p... w o r k...  
n u q u n... r-

C C... n r... o p o p u r... w... p r o... U p p o r or w o r  
k... r... o p... F r o... o p u r... n... o... w... u... p r o  
... C C... o p u r... o p... n... o w... r... n... r o... n... p...  
... u... o n C C... w r...

... n... w... o... r p o p... o n... u... u... w... o... u... o r  
Y... p r o... o p u r U p p o r or o m... o n... u... q u r...  
... r... o... w... r o u p... o r... o n... u... o n...  
... u r

... o  
Co, p u r, o... oo... , ...

... o... - p... ,... or... 7

### 2.1.1. Concerns of fields contributing to CSCW

The first concern is the impact of CSCW on the work of the individual. This is particularly true in the case of the 'social' sciences, where the individual is often seen as a central actor in the social process. The second concern is the impact of CSCW on the work of the organization. This is particularly true in the case of the 'organizational' sciences, where the organization is often seen as a central actor in the social process. The third concern is the impact of CSCW on the work of the community. This is particularly true in the case of the 'community' sciences, where the community is often seen as a central actor in the social process.

The first concern is the impact of CSCW on the work of the individual. This is particularly true in the case of the 'social' sciences, where the individual is often seen as a central actor in the social process.

The second concern is the impact of CSCW on the work of the organization. This is particularly true in the case of the 'organizational' sciences, where the organization is often seen as a central actor in the social process.

The third concern is the impact of CSCW on the work of the community. This is particularly true in the case of the 'community' sciences, where the community is often seen as a central actor in the social process.

The fourth concern is the impact of CSCW on the work of the society. This is particularly true in the case of the 'societal' sciences, where the society is often seen as a central actor in the social process.

The fifth concern is the impact of CSCW on the work of the world. This is particularly true in the case of the 'global' sciences, where the world is often seen as a central actor in the social process.

The sixth concern is the impact of CSCW on the work of the universe. This is particularly true in the case of the 'cosmic' sciences, where the universe is often seen as a central actor in the social process.

... n... u... n... on p... or... u... n... on o... a... u... n... ro... u... r...  
a... a... ,... a... ,... on p... n... ro... u... o... u... u...  
... n... on... op... n... u... on... w... o... a... a... a... or... ro... a... o... r... a... a... or... o... a... a...  
a... o... wor... a... w... a... a... a... r... o... u... n... r... u... wor... An... a... or... a... n...  
r... a... or... or... pro... on... o... o... a... o... a... a... a... o... q... u... n... a... a...  
... u... a... n... o... u... r... o... r... a... or... or... pro... ,... r... u... .... p... n... r... o...  
... a... or... w... o... a... o... r... o... a... or... a... a... o... a... or... a... n... a... or... w... o...  
wr... a... o... u... n... o... r... a... n... a... n... o... a... or... a... wr... n... E... a... pro... o... wr... n... o... r...  
a... own... a... w... ,... w... a... n... u... a... a... a... a... r... o... u... a... a... pro...  
... n... on... p... a... u... a... u... u... or... a... r... u... on... n... ,... n... u... on... a... no...  
on... r... o... a... or... r... a... a... non... o... u... w... a... p... r... on... w... o... n... a... n... o... a... o...  
n... r... =

Co... a... or... a... n... wr... r... or... o... a... or... a... n... a... or... a... a... or... n... a... n... pro... o... wr... n... a...  
... o... u... n... o... r... w... a... a... on... o... r... p... r... o... a... ,... u... a... n... ro... n... n... wr... n... a...  
o... a... or... a... a... u... r... u... u... n... o... a... .

... r... wr... n... a... a... or... n... a... no... r... p... a... n... non... o... u...

### 2.1.3. Overview of chapter

The chapter is divided into two main parts. The first part, covering chapters 1 to 10, deals with the general theory of the subject. The second part, covering chapters 11 to 15, deals with the application of the theory to specific cases. The first part is divided into two sub-sections: the first sub-section covers chapters 1 to 5, and the second sub-section covers chapters 6 to 10. The second part is divided into three sub-sections: the first sub-section covers chapters 11 to 13, the second sub-section covers chapters 14 to 15, and the third sub-section covers chapters 16 to 18. The first sub-section of the second part deals with the application of the theory to the case of a specific system. The second sub-section of the second part deals with the application of the theory to the case of a specific system. The third sub-section of the second part deals with the application of the theory to the case of a specific system.

z qur n n n rn orr qur n z on nw r qur n or  
z z or n z op n Fro z o pu r  
op n pon o w r qur n n n rn o w z  
u ur o w z un on z o pro o u r- Con pu z  
nor z on on z n w z nown z qur n p z on por z  
o o z onr u on o ro no o o q u z z o o o  
o z p o o z u z z z z z z ur z  
o n xpr n z o z o pro z z un r z n o o  
z p o ow p op wor z er ow z o pu r p u

n z op n A pon z u z o pu r  
p z n z p n on pu z qur n p z on urn n o  
z n z n n o z n p n z on p z p z z pro z z o  
n o r pr n z o u ur u r n n o z z  
p z -

n- A r z z n u z z n o u z w  
z propr z u r ro up z no r z z n w u o p op z p z - n  
C C z n u no o u o w r p n  
n z e w z w z n n o z o pu r n n u r z r  
z z o r z on ow p op u u no -

Con pu z z on o pro p z - z n u z w n  
z or z n w z r n or u z r qur n z z w  
z o n z q u on o w z n z r u z e z n o z  
n z on on w z o n on o w no r z  
z pro z o u z z o z on r z onr u on-

o z on r q u n n on pro z z n op n o C C  
n z z o o u n z on w n o z z o pu r n z n r z wor  
xpr z pro o z r n r u w n z z z oppo o  
y u on o wor w n z z z pro n r o z z  
z o - z or p z on or r qur n n n rn o z n z no u  
ow z n z z n r z z u o o o r or z  
z n n x r -

o z n p z o qur n En n rn or qur n An z w  
r o n z z on z n p z or z n r o r z on r z n o z u  
o p z on n r z o ow p z on o n qur n An z  
u u z on r z pro -

Br. n. n. n. ZproZ. Z. Z. n. w. o. p. U. r. i. op. n. Z.

nro<sup>u</sup> r.n on n.o p on or n<sup>u</sup> zn rzn on o n o z z n  
r z z or<sup>u</sup> z z pro r z n z<sup>u</sup> - Au p z y<sup>u</sup> on w o<sup>u</sup> u zn  
n r n on wo<sup>u</sup> z r z z o z o p o n z o p up p z o  
pro o r z zn<sup>u</sup> ro pro w zopro z - An n r n  
on z z z o z p on z z<sup>u</sup> n z z z o<sup>u</sup> p p op w o  
n o n n pro z z n r z on<sup>u</sup> zn zn n p z<sup>u</sup> z<sup>u</sup> r z n  
o -

n on w n r q<sup>u</sup> r n z on zn n n C C n  
z no r z z o o w z En n r n n C C z on o z o<sup>u</sup> r o<sup>u</sup> z o  
y ro<sup>u</sup> w n o o o w o z ro<sup>u</sup> p o<sup>u</sup> n r zn on z or z on zn  
o p<sup>u</sup> r n w o z xp p pro no o r q<sup>u</sup> r n  
pro ow r pro z z r n<sup>u</sup> r n z n C C or y z p  
u z z z z z ro - Fr r pro o w r o n z w n  
z<sup>u</sup> z<sup>u</sup> u zn z on z z r z n o w z y n e o w z r o<sup>u</sup>  
wor z o<sup>u</sup> n r zn n n o r r o<sup>u</sup> n r z w z n e n o r z on or  
now or<sup>u</sup> n r zn n r n z n w z or Eq<sup>u</sup> z o w z y n e  
o p<sup>u</sup> r n n o<sup>u</sup> n r z o o o z n q<sup>u</sup> r o z z p o n o<sup>u</sup> z o  
r q<sup>u</sup> on o w r wor r z z z z w n o or z o p p  
n o n o r z on o<sup>u</sup> n r n z o no on z n  
z o<sup>u</sup> n o r u o o w p o p i wor z u o o n z  
r<sup>u</sup> n z o<sup>u</sup> p p r z n n n<sup>u</sup> n n o n p o p i wor  
w z n n z n<sup>u</sup> o r C C r z - A z ow r  
r zn n r n on w n z n r o o on on z z p z n  
w n n z n pr r n ro<sup>u</sup> o p<sup>u</sup> r z p o z o  
u<sup>u</sup> r u z on o r z wor w or n o r p z o<sup>u</sup> n o z on  
z w r n z<sup>u</sup> r r<sup>u</sup> or r z on w z n r o pro  
pr r p o w r z n o p n o r no<sup>u</sup> z o<sup>u</sup> p o r z n z  
z<sup>u</sup> o n e q<sup>u</sup> on n n C C or zn n p<sup>u</sup> r n z p z o o p<sup>u</sup> r  
n<sup>u</sup> n o or z q<sup>u</sup> on o w r pro o C C z or z z  
w r<sup>u</sup> r n wor r z n n<sup>u</sup> o r o o n o<sup>u</sup> on z wor n p z  
r zn o p r<sup>u</sup> z n wr n r n ro<sup>u</sup> on o ro n o C C  
on r n z

o zn o p<sup>u</sup> r<sup>u</sup> p p r z wor z o p n z zn  
q<sup>u</sup> on z z z n w r on r n pro o o p<sup>u</sup> r  
n z n z<sup>u</sup> r o wor z w z n o<sup>u</sup> p p r<sup>u</sup> z  
p

## 2.3. Thesis central issue: how can we support practises of distributed collaborative writing?

o z on or ... o on r u o ... n o z p p r o z a o p u r ... o  
U p p o r o m z o r z w r n o r z n r o u z n p r o u n r z n o z p r o -  
w o r o p u r z z p z u z p o n z o o n o u r u r o u p  
w o r o n z o n n o o z z z u z p o z z u p o n - A  
p o w r u n o o u z n w o r o p u r o u r o r z p w o r  
o p u r p r o r p z n r o z o u o n p z u z x u z n o r z o n  
o r z r z z n w o n z o o u o w u u o u p p o r u  
w o r n n z z n r u w r n n p z u z p u o z p p r o z u - r z  
z z o o p u r n r o n p o z n z p r o z a n  
z o p r o z p p r o z U p p o r o n n r n o w w z w o u o n u  
z p p r o z U p p o r z z o p x q u o n w z n o n n o w n o n  
u o r z p p r o z z n p r o z u z n w +

### 2.3.1. In what sense can technology provide 'support'?

n z p z r u n n o o n o o o p r z a n o z n z n D z n n w r  
w o r w u z n r p o n w z r z o z n r z o  
o r z o n o r u r u r u n z w z r p o n o n z n q u o n w  
r z z n z n w r w n o z n z n D z n n p . 7  
o w r o z n z n D z n n n o n o q u o n w z z n w n w z z o u n o o  
U p p o r n z z z q u o n r z z n z z w o u r o r z n o n  
z z n U p p o r o p n o n r p r z o n z n e p n o n

o z w o n z n o n y o r A z n z n r D o n z o C u r r n E n  
r o n n U p p o r u o z w o o o r U p o r p n  
p z a o r r n n a p o r o n n u o r r y o r E n D o n z  
z z o n o r z o n o o n r u n o u o o r z n z n z u o  
o n E D C C r z z o n r u o u o o r z n z n  
z u o o m z o r z w o r w z u z n w z z u z n o m z o r z w o r  
n z z C C o n r u o C C o r o p  
o p u r w z w o o m z o r z o n r w n o n o r U p  
o r p o m z o r z o n n p z a u u o u w o u z p z u n z n z o  
p r o o C C z n o n u z z z o n r o i w n n  
w z n z w n n o p u r z z o U p p o r o m z o r z o n n  
n o r n n n z p o p r o - F u r r o r o n o z  
n u n o z z z n z p z o o r z z u r u w o r w o u n o



po w o u i z n n o o - n o z w z z n z o u n z n  
o n



Ż p o wor e a no a ar a no on o w e, or y a p w a  
p n o on or o r n a w a n o a

n on r n w a o on p u z n o r z on z u or n z

**Collaboration as purpose**

or o an p r z p n or z z z o u o z or z on z z un on o z  
z u on o z z on o z or z or- For y z p w n z n z z w  
z wr n o n o r w z no r z o n z r p o z  
o or z n p z on or z n p o o n on wor z  
en o + z xp z z on o o z or z on z o w z

o ... pro ... w ... zpro ... z w ... o o ... roUp ... r n ...  
z no ... nown ... oU ... z ... nU ... ro ... r ... z ... ur ... pro ... z ...  
o on w o w ... no ... n ... z ... p ... o ... roUp ... z ... p r ... no ... Up ... o ... on ...  
n ... o ... z ... z ... r ... z ... r ... w r ... z w ... o ... orr ... p ... n ... z ... or ... z ... no ... r ...  
p r on ... z ... p o ... p ... n ... z ... n ... z ... on ... z ... p ... r ... op ... A w ... u ... n ...  
u ... u ... z ... on ron ... o ... or ...

***Collaboration as learning; thought and writing as inherently social acts***

n ... op ... n ... z ... p ... o ...

o r z n r z n p z z o u on r pr z or  
u r z n z z u z wr n

For z o on n n z z o r no z n u z no  
nr z on o z r n wor o z or z z oop r z z r  
u n on n on z n o o r z on wor

**Collaboration as awareness and overview**

n on r z w y r z n u z o n or n z z u z w p z e no  
on r o n z o z or z on n o r

WZ n woU z u z u op n qU onr qUr n Ur rr z - ow r  
on rm w u r u n n n C C u n n u o z  
on m p z n o o r z n z z z o o r u r  
zpo on w onr z z on z u p on n n  
n z r z o n ro z n u r z z o r u r z z o u n  
o n z z z B z r n o r po z or n z z u Ur z  
z n o n r o op r z n z op n p z or -

**Collaboration as a nonpredictable process**

r z u n z p z r on on o z oUr n w Urn o u on war z on  
wor o n or z n war n ro u no on o oUr o z pro n  
nonpr z w z z on y n pr z z z z r o r r z z n  
p z u z ro o r z on o o p z wor A r n ro u n on p o z z o war  
wr A z o o z p z n or n or n u z o n z r  
z Un xp on n n w z r z u r o z z u o  
o r z z or z z o n z z nno nown n z u y p n r  
z z on n n z pro u n z z or oo z z r w n r  
oUr w z r z r r z u p -

n z p o on n n z Ur o z on op u z n n r oo z z z  
u z z on pro o u z z n o Un z on u z z 7 z pow r u  
r qU o o n z o u n zopro z o G n p z u z o u on  
qU on o w r p z n n z n r n z on oUr z u z z z on  
n r n u z r or z n o z on n z r z z n p z ro  
on y or u z on n w n p z n o no pr r or n z  
ron n r p z on n z p z n z on o z n r oUr or z o n A r or  
y z p z z z z z z n p no on o p z n y u on n Ar z  
n u n z or n z n z Ur o r z z z n ro u z n  
z u n n z or z r n zopro z o ro o n r p z r u z n

Coop p ow z o o z r wor o r z n z on u n no on o  
u r z pro r o o p u r r n z pon n z u r z no r p z  
r p n o w z pro r z own z z pro r u z u r w  
r p o o r u p r n r u r no z n pr on w n u z on  
o n o n u n n r r r o z p z o r wor z r r  
n or z ro z o z u r n z n r u o or y z p z z w o  
on r o z z o r u u z pro o z z z on z w w n u r o z  
n w z n no ro u op r pr n o u n  
z r z r u r z no n z z no z pr on z u or z u n z  
r z u u or p u rpo o o u z ow r z n no w z p z  
z z p z ro or pr on z n z z u r n r w r p o no o or o w o  
u p p z z z n z r



... p... o on u n o ou ... u ... n C C ...  
... A on r p - u n r ... Coord ... no r ...  
For ... u on ... ppro ... or no ... n ... o ... n r n ... o ...  
... on ... r on ... o o ... n r ... o ... r on or  
on r on ... r on-

... on o ow p ... u ... por ... no on ... or o on rn ... or o  
u ... on u ... o or ... p ... n o o p ... - ... w r ...  
p ... p ... y ... u ... po ... wo ... op n up or pro ... o p ...  
uppor ... or ... o ... p ... or ... p ... pro ... r ... o p ... o



omā orā on pā n r p. zā zā omā orā on pā n r zā in ro<sup>u</sup> zā zā n o  
 r pon r zā on rā. — p. — E n zā n p r on wr n o<sup>u</sup> n zā on  
 zā no zā n pā zā r o zā zā r o<sup>u</sup> r zā n pē 7. — A zā zā<sup>u</sup> n  
 zā r zā n pon. — w o zā on zā o<sup>u</sup> on o omā<sup>u</sup> on r<sup>u</sup> on n  
 r w n r zā n pon n o<sup>u</sup> ow wr r zā zā zā zā n zā o<sup>u</sup> n w  
 n on w n zā r p n zā o<sup>u</sup> n w r r now zā zā n zā  
 zā zā r o<sup>u</sup> zā o<sup>u</sup> n w n zā o<sup>u</sup> n. — Uppor zā<sup>u</sup> zā  
 on zā n r o q<sup>u</sup> p.

or<sup>u</sup> n zā n zā on r zā zā n Br<sup>u</sup> zā<sup>u</sup> n zā<sup>u</sup> zā<sup>u</sup> zā<sup>u</sup> wr n zā  
 r zā n zā n r n omā orā on n zā<sup>u</sup> n o o<sup>u</sup> n zā  
 w n wr n on o<sup>u</sup> r own zā omā orā zā on n n Co<sup>u</sup> r zā r zā  
 E zā<sup>u</sup> n o<sup>u</sup> zā on o r o r r zā or p r on n r  
 zā p r n p n on n n n ow r o o r p r zā r zā on o  
 n zā on zā zā n r on n no w omā orā on zā n r o  
 non omā orā on<sup>u</sup> w w zā p op zā<sup>u</sup> zā<sup>u</sup> n o zā w r wr n n r  
 r zā o o zā or omā orā zā zā n o n o r zā. — For zā or  
 p r zā n on o n e omā orā on<sup>u</sup> zā o r o w  
 zā n n o n zā zā zā<sup>u</sup> r zā n propo zā p r n p n on

**Authoring as articulation work**

A<sup>u</sup> or n zā<sup>u</sup> r zā p zā<sup>u</sup> zā<sup>u</sup> n o wor n o wr n r zā y<sup>u</sup> zā  
 zā<sup>u</sup> zā on o o<sup>u</sup> zā op n on zā er o on. — An zā<sup>u</sup> n zā zā wr n  
 zā zā zā p zā<sup>u</sup> zā<sup>u</sup> u o zā<sup>u</sup> zā on wor zā no on<sup>u</sup> oop rā on  
 zā w Uppor zā omā orā on zā op zā zā<sup>u</sup> zā<sup>u</sup> zā<sup>u</sup>  
 n on zā o<sup>u</sup> zā o wr n zā<sup>u</sup> o<sup>u</sup> op n zā r zā  
 zā op wr n zā o<sup>u</sup> n o r zā non ro<sup>u</sup> n zā n zā zā p zā o r zā  
 r zā n on w on or zā or zā o<sup>u</sup> or zā r zā r p zā

For omā orā wr n r zā r zā zā w zā<sup>u</sup> zā on zā p zā on  
 xpr on o zā op n on w zā o o n o<sup>u</sup> n zā<sup>u</sup> zā on zā  
 o o wr n pro o r zā<sup>u</sup> zā on wor p r or  
 omā orā or w r o o o n zā omā orā on n o r wor zā<sup>u</sup> zā on zā p zā  
 o on n o wr n pro — 7. — on

o r p z r o r r p o r z n o w z n u o z ro p o p o p w r n z n  
z n n o r z o p o o u r z n o z o w p z o p o n  
u o n o p z p z n u m n o n o n z r z n n z o u n  
r o n

A n z z o u r n n o n o z o r n z z u z o n w o r n r z r w o  
z o r n z z x p r o n o n o w r r z r z z o n  
r z o n o

**Authoring as cognitive activity**

o n prop r o wr n z z r z n on o z z prop on o  
r z on wr n o u r z r n pr n n z wor o z z  
Flow r or y z o p or z z Flow z o n on z r wor w z y u n ropor on  
o u on o n z p o wr n z z n n z or z n z on o  
u o wr n z n or op n o r z pro o p or wr n Uppor z -7

... wr... n r n... o... or... on... A... o... u... w... o... z... z... n... ro...  
wr... n... o... z... z... r... u... n... k... e... o... n... o... u... n... w... o... r... w... o... z... o... ur... n... r...  
n... now... n... z... now... z... n... pro... z... on... u... o... ur... o... n... q... ur... r... n...  
o... z... or... z... on... z... no... o... rw... -... p... p... z... or...

**Authoring as an observable phenomenon**

n... wor... r... por... on... n... z... or... z... o... z... or... n... p... z... u... z... z... n... z...  
z... o... o... u... u... r... z... z... z... p... no... non... w... z... n... o... n... o... r...  
n... z... p... o... or... on... ro... z... or... z... xp... r... n... z... or...  
-

A... z... z... o... r... z... o... z... or... z... wr... n... o... n... o... r... wor... w... z... u... u... z... z... n...  
C... C... w... n...

U n U Z po n Z or noo Z o U on Z n Z o n Z on on n  
or Z r Z Z Z U Z C C - ow r n q U r Z on Z U Z o ow  
r Z Z nno r on U n pr Z pro r w ow  
E pr Z Z n U r or Z n w Z Z w F w on U n Z  
U o wor o r Z n Z n on U r n C C or n on r U n Z Z n  
p Z U Z w U o r Z on Z U Z n on U o r Z on w Z  
o Z U n Z r w r o o Z p Z on o U n r U  
ro U p Z U

n on on r r o p Z on o p op wor n o r w p Z Z  
p Z Z n -

**Distance as distributed authoring**

n C C Co p U r U ppor o Co Z or Z r n Z o pro n Z Z n  
w o Z Z Z n on r U wor o on Z on o on r U n r Z  
r o r Z on or n r n wor Z ro Z n r o U o r wr n  
Z y Z w n Z or Z p U Z o n r U wr n  
Z Z Z Z or Z n o o Z n noo Z Z Z or  
o U n Z on Z o Z Z o p Z p Z U Z r wr n p on  
y n nor Z or r Z U Z no Z o r or op q U Z  
r Z Z Z or y Z p or or Z U p op Z

U r U w Z o Z or or  
or y Z p or Z n  
o U n Z





w o u z r p z r n p z z r z r or or ow o z w or  
o no o z z z o o u n z on z op z n ur or  
wo z n op n o z z n u r o n w no o z o w z  
po or o o o u n z on no nown or or y z p z p on  
r z o n n w o u n z noo p u p op n n w o u n z  
u z on w r y n nor z pro n z q u z For y z p n r wr n  
on n on z o r or n xp n r z o wr n z nor w z  
no q u z n n r z on r z on w r r n z w n o u n z or z  
n r n z n u u n w nor op or y n nor z y n or n w z  
ow r z z r z n w z z po o u n z or w z n  
o q u z n n z o r z n w z o ron wor n ron z n  
e Con r z on An z p op o u n z oor n z on z n u n r z  
z n u n on r z on z p on

p z on o z z u u z o

## 2.5. Research on collaborative writing

... ..

Z... E... Zn... Un... Zn... n... Zn... Co p... r... n... Zn... on... Zn... C... on... o...  
w... r... p... urpo... op... o... p... ur... p... ppor... o... Zn... or... Zn... wr... n...

o r p r on , Un or

A u n on z o n o o o z n q u r z z n on r u p o  
r q u r n n n r n C C - n o u z o r z w r n r o z o n z n o  
o o o - n z u o r z o r o z r z o n o y p r n z u o  
o n o n o o r n z n p r o n w r n z o r o u z o n z r z z n r z  
r -

A n o n z o F o w r o n o z n r z r n o n o n o w r n z z r  
z u o r r z o n w r n o n u n r o n n n w w r n z p z  
F o w r . r z o n u r z o r n o w z r o w n o o r z o n  
w r n r o z o o z p o n o w E n o r z o o u z o r z w r n n u z o z  
u z z u o z z p r u z o n u w r z u o  
o n p r o u o n o z n z r z z o n z z z u o o z  
p r o o n q u r n w r n o u n n z n o z o n E z n z o n  
o r w o n u n z u o w r n n w z o n w r n o z z o p z n  
u n w z o w n o n u n o p z n u u r z o a n C C  
n o r z o u o o n w r n z n o n u w z n z w z n o r  
y z p z z o z o r y z p z -

z w z u z z z z o y z p o n r n o u z o r z w r n  
o r n z n n o o o o n w r p r o u o n o n p z o r u z  
o n w z n w n u r u r z z r z o p r z r w -

#### 2.5.4. Collaborative writing studies in social psychology

n o z p o o y p r n z u o r o u p p r o z u r z z o u r o u p  
z o u r n r o r z z z z n o x p z z n w r n o o  
u z r z o w o r n o n o n z n r o u p n u n o z o r n  
r o u p n n n p z u z z o n o o u n z o n n  
z z o p u r z o p p o z o z o z w o r n o n

E z n u n z w o r o n o p o n z z o n o z w z o n u  
r z u r o u n z o p n o n z o r p o z n r o u p w o  
o u n z o n z o p u r z o u z o z w z n n o  
o z n o r z u r x p z z o n q u o n z z o n o

A or o Z p oo Z r Z on o Z or n n p Z u Z Z Z Br Z n w Z  
. r por on Z q u on n Z r u o pro u Z Z p oo wr r r Z  
o o r u no Z o u wr n n o Z or Z on o r — . . . . . ro u

p r o r z n o z a p z n r n w z z p z n o  
u F u r r o r n r u q u n p z r r r r n z n  
z r z n p z o z n r o n n o o z z u o  
r o r z u z o n z p z o n o o p z z n o w z w r r u  
r p o n z x w w r r z p r o u o z z z o F o w r  
p r r u o p n z z o F o w r o r o n r n p o n z  
o n r z z o r u z o z z p z r o n z o n  
o z o r z w r n

A

n r n o no z w o r r n n z z z ro C C -  
no noo z wr n r z ow r z wo propon n n C z r z  
r z C z r n u z ur w r p r p on o z z wr n  
n u n pr z n o n ron n o wr r z z r C z r  
pr n z ur o z n n p r on wr n z on 7 z z z ur n  
z r n xp r n o wr n u no w r p o o z or z wr n n



o wr\_n\_o + por Zn on Zn no u Zn ro u Z r Z on  
wr\_n pro ow r r n prpo o u wor u orn n n For  
y Z p Flow r Z Z n n Z o n o o

Ż r xp Żn Ż , no n p p p Ż u Ż o o Ż or Ż wr n o Ż w  
Ż n on nr Żn on Ż p w , o u Ż q u w n op or

**Distinct roles**

A on... n o o... o... or... wr... wor... y... n... z o... r or  
o... or... or... o... z... n... y... n... r... z... n... o... o... w... r... or... or  
z... z... u... z... u... p... n... B... z... o... z... ro... p... or... z... z... o... n  
z... n... C... C... r... z... w... r... z... no... z... y... z... p... C... pro... w... o... u... o  
z... r... U... p... or... or... u... o... u... z... o... o... p... y... o... o... n... w... z... u... z... or... o... p... u... r  
p... n... z... on... z... p... r... on... z... o... u... n... z... on... z... z... z... o... o... n... on... z... B... z... non... z...  
or... z... r... q... u... o... C... z... o... r... or... z... z... r... z... B... u... o... o... z... or... z... o... z...  
r... p... on... z... z... w... o... z... on... o... z... o... o... n... z... n... or... n... ro...  
u... u...

z... o... z... on... o... ro... z... z... u... p... on... o... w... n... o... ro... z... n... p... ro... p... n...  
C... C... wr... n... r... z... ur... z... z... n... q... u... wr... n... ro... u... p... u... o... o... or... n... z... r... wor... n... o... z...  
z... F... z... r... z... w... o... p... ro... z... ro... r... z... o... r... z...  
z... r... Co... n... r... Co... A... u... or... p... z... or... n... o... w... z... p... r... on... o...  
z... u... n... z... z... o... z... r... z... or... or... U... p... or... n... o... z... or... z... wr... n... o... ro...  
B... z... r... z... o... n... r... z... z... w... z... z... u... w... r... z... r... C... z... o... z... or...  
z... Fro... u... on... z... ro... U... p... or... n... o... z... or... z... wr... n... z... z...  
z... u... on... o... o... w... z... z... on... on... wo... u... p... r... on... z... p... o... z... or... ow...  
o... z... or... n... ro... u... p... o... or... n... z... wor... ow... r... z... n... z... n... r... z... ro... z... u...  
y... z... o... n... o... z... or... or... n... o... w... wo... u... n... z... or... o... p... u... r... U... p... or... or...  
ro... o... z... u... z... on... o... p... ro... u... w... r... z... r... C... z... o... z... or... z... z...  
z... or... r... n... z... w... z... n... o... n... z... n... z... D... p... p... o... n... z... p... ro... z... ro...  
p... z... on... z... o... z... u... u... r... z... or... z... z... n... o... o... or... n... z... on... p... ro... z...  
ow... r... ro... u... z... o... z... or... z... o... n... r... u... z... z... u... n... r... p... z... z...  
n... o... z... n... o... or... n... z... n... o... p... y... z... u... z... o... z... or... z... wr... n... p... o... z... n... on...  
z... ow... r... n... z... p... ro... r... z... o... o... p... u... r... U... p... or...

ow... no... on... o... ro... n... r... z... ur... z... n... z... r... z... wor... z... o... r... y... z... n... z... or... o... z...  
on... y... z... p... o... z... or... or... z... r... z... n... o... n... r... ro... n... r... w... w... o... z... or...  
w... r... r... ro... z... z... o... w... z... z... o... z... or... z... p... n... o... o... r...  
z... or... z... n... r... n... n... u... ro... w... r... no... n... z... w... z... o... z... or...  
z... wo... u... z... o... n... z... n... z... n... z... ro... z... z... r... o... n... z...  
y... p... z... on... n... on... o... z... w... r... z... y... p... ro... U... p... or... p... r... u... z... wo... u... r... q... u... r...  
o... z... or... o... o... o... ro... z... r... z... ur... n... on... o... ro... u... z... z... p... o... n... z...  
p... ro... z... u... w... r... z... r... C... z... o... z... or... z... z... D... p... or... n... u... z...  
z... p... ro... z... o... n... z... on... n... o... n... r... wor... ow... r... z... z... r... p... z... r... z... n... or...  
r... w... u... z... or... U... p... or... o... ro... o... n... r... z... B... z... r...

n on rā o ā ā B... n ā u ā ā o u ā ā o rā ā r w  
w r ā ā o ā n on o rā ā ow ā n u o on p

on p o rā n r ā ā n ā u ā o o rā  
ā ā u rā r r pro ā or ā r n on rn  
on p ā r or ā o r n rā or  
po o on n ā n on o rā o o ā or  
o ā w ā po on ā ā o po on o o p r on w o y ā  
rā u ā ā n on u n r r ā on p w n  
ā r ā o p r on w o w o o r n ā ā r ā r  
ā of B u ā n on ā o r r - A w ā ā u ā n po on  
ā r n ā ā upon ā or ā or non ā or ā r ā ā n ā  
po on o rā ā r ā po on ā ā upon p ā ā ā or  
ā ā n o r ā ā rā rā on p ā ā o n ā ā ā o  
ā or no ā o ā w po on n ā ā on ā n on  
n on o u o on ā n on ā o rā ā ā o ā  
r o n w on n on p n w ā o p ā o rā  
or o o  
pr r n o ā or o o o ā n rā n rā r  
r ā r n o p ā n u rā u w ā n w p r on  
ā ā o ā w ā or o ā ā B... p

qu on o o pu r uppor or rā r or o p ā ā ā w u ur r  
u ā n r ā on o p r ā u o

**Distinct strategies**

En ā n ā u on o o o o ā or ā wr n n w ā n ā wr n rā up  
rā Co po on ā r ā rā on ā n n r ā n wr n rā  
o ā r ā n ā ā ā or rā n ā n no on ā n o o  
r ā on n ā p r on wr n or yā p ā Flow ā C ā r ā u ā o n o  
o ā or ā wr n r ā - D p ā propo ā o o ā or ā wr n rā or yā p ā  
n ā p ā ā w o propo p ā ā qu n ā ā r pro ā rā ā ā  
p r ā wor ā n on ā ā on ow o ā or or ā n r wor ā ā r ā o ā  
or yā p ā ā o u ow u rā r ā o w ā y n ā o r ā or  
p r ā ā on qu n o n n o ā n on ā o wor ā oppo ā ā o ā n  
ā ā or ā ā on o wor ā on o ā or yā n ā n ā ā p r ā u  
r ā n n ā u on or ā ā rā ā p r o ā o on p ā ā n wr n rā ā on  
o ā or ā ā r ā

**2.6.2. Implemented CSCWriting systems**

r p ā w ā r ā n ā r ā rā row n n u r o pro p o ā or ā  
wr n o ā - E ā on n ā u ā ā ā F ā r ā ā ā w ā ā on  
o r ā ā r ā uppor ā n on o o ā rā ā ā ā ow ā ā p r ā on o ā ā ā



z n orr z u p on z o u u z n o u n z on z o n r n n n n  
on u z n z z n w z o p y z o p u r u p p o r  
o o p r z w a r u n o z n o r z o p r o z u  
z u n r e r z on z z F o r z o B o r o w . p , 7

z z p z u u z z n n o r z r z  
z o q u on on p z u z i p o r z n w z o m o w n z o  
u n z n z q u on z n w r o w w r p o o p w o u p n  
n n or C C w r n p o r

z n o z o r o u z on z p r o r z n o w r n  
r o u p z o z z o r w z r z n z z o r w z n o  
p z z o u n q u on w o r z o n z o n z n w  
n o p z z u o r u o r p z z z z o r w z z  
z n on r z n u u o u z o r z z u o r n n r z n n p o z z  
u z on w z z p o z n z on u o o u z o r z  
w r n r z n o u n r z n w z n e u p p o r r o z o p u r  
w o u o z o p r o z z

z z z o p r o z z o o r r n z z n o u z o r z w r n o  
n o o o r r o r z u r z p z u z i z o p r o z z o r u n  
o p u r u p p o r o r o u z o r z w r n A n p o r z n p z o r o r o  
n z u z o o r n o q u on z z r

o w z n u o z o u z o r z z u o r n z z z u  
u o w z z o p r o z z o u z o r z o r p o n  
n z u z n o on o u z n n o x p o n p n n o z n  
z n o p r o r z n

o w e w r r p r z o o u z o r z z u o r n

w r z n p o n o r u r r n u q u n z o r o w r  
n o n o z p z z z r z p r o r o q u on w z n z n  
z n n o z r z w o r o o u z z z o r n n z o r n o r  
z r z q u on r o u r z n o w r u n r n  
on r n o z n w o r o

## 2.8. Summary of chapter 2

... z r z n z ro<sup>u</sup>o wor r r n u q<sup>u</sup> n z r  
u n o n r z on p ur n r z ur ro r z z z z pr n n  
u z r r n -

r z row n r z ur on o z or z wr n u o p<sup>u</sup> r u p p o r pro  
u n z z z z q<sup>u</sup> on r z n u n z w r o z q<sup>u</sup> on z o<sup>u</sup>  
ow p op wor o r w n wr n n p z u z w n wr n o r z r z n  
u n z w r F w on u z u o o z or z wr n y po n z por z  
z z o on y z n z o wr n ro<sup>u</sup> p n n o r z r n  
o z or z wr n r z ur u o n r z n z r z ro o  
C C r n -

n y z r z r u o o z z p r o r z o  
p r z u n -

# CHAPTER 3. METHOD

---

## 3.1. Introduction

A Z^n Z\_0 ... p onr u o i no



... r ... n ... r ... ow ... n ... r ... p ...  
o ... ur ... p ... p ... xp r n o ... or ... wr n ... no on ... n r ... or  
or ... n r ... u ... p ... u ... on r u on o ... r ... r ... n o  
o p ... r ... w n ... n u ... n ... u ... n  
n ... on ... xp r n o ... r n ... on w ... r n ... on ...  
... r p r p on o ... on w ... -

... n ... u o n ... r ... on ... o xp r n ...  
on ... ow ... o xp r n ... n ... or ... -

### 3.3. How can distributed collaboration in writing groups be studied?

... n ... on p ... on o ... or ... on ... n ... w r  
u ... on ... on ... qu ... on o ow ... n ...  
n ... n ... u ... on ... or ... p ... o xp r n ... u ... ur o  
... w ... n ... p ... o r ... n o C C ...

... r o p o p o p ... r n ... n ... n ... r ... p ...

Fr ... o ... n r ... n ... r o p o p ... n o ... w ... r ... n ... r o  
o ... n ... o ... p r ... r n ... p r o n ... r ... u ... r n ... o ... r o  
o p ... n ... on ... r ... n ...

... o ... r ... n ... p o p ... wor ... n ... o ... r ...  
... u ... r ... p ... o ... r wor ... n ... n ... por ... pon ... or ... r ...  
n ... o ... or ... wr ... n ... w o ... on ... n ... w ... o n ... pro ... n ... u ...  
... ow ... n ... n ... u ... o ... on ... w ... n ...  
p ... p ... n o ... r ... p ... u ... o ... or ... xp ... w ... n ... p ... p ... n ... r ...  
p ... - B ... o ... u ... n ... no ... r ... or ... o ... u ... n ...  
o ... or ... o ... r ... +

... r ... u ... n ... w ... o ... o ... o ... r ... on ... or ...  
... Expr ... n ... x ... n ... w ... p ... r ... n ... r o p ... n ...  
o ... w ... o ... r ... w ... r ... p ... o ... r ... pon ... o ... p ... u ... r ... n ... r ...  
n ... ron ... n ... xp r ... n ... on ... n ... xp r ... n ... r ... ow ...  
w ... on ... r o ... r ... on ... or ... xp r ... n ... x ... or ... r o p ... w ...  
... x ... p ... on ... o ... r ... or

Exp r n z o z ppropz o zuz z o z z  
po z n z r u no or xporz or r z u z z r por on  
n r o z r or or ppropz Exp orz or o n u  
o u n w z z on z r r z on or r p r p z on  
r or r p r p r p on o z o u z p o worz w z u  
r z z o u Fro z on or r p r p o u on r p on o  
n o z p o worz z on z o p n z u z u or z  
n r z n z o u n o r z ro on

qu on o w z n o z or zppopr z or qu z n z on o z  
op n A n z z o z p r z on o y n wr r pr z on  
ow n xp r n z p z z o on rom y z or z ur n pr z or  
z r u - u zpproz z z u z z o n z e n z on n r z n C C  
on pro o o z or z wr n n u y z o r z z r F z z  
C z on - w o o u o y z n z o n n o z or z wr n  
on - n p z u z y z n wo po z r z zpp n Con n n  
or o o z or z wr n n z w r z qu o z o wr n z  
n r z o un z on o z z uppor r o un z on z or z o  
u z z w r o z z u qu o z z z n z r o u w  
r z r z z r r u p 7. r xp r n z y pr n z  
z p o z u z o z or z wr n A u z o y wr z  
on z z or z on o n wr n no r n p z or w pr z z  
z p z o w z on - Fu r or z on z u p on o z z z  
r z on p w n p z n n z wr n r z z r F z z C z on z



wo on- on no r or q nq z no o-oo z  
roUn or- E no o-oo ron o n o z z z p z z  
r on p w n no r r z o n nq z roUn or  
o n p z or n r roUn z z z or w z z z  
u z z n n on nq r o z pro z z pr n n y  
wo on- on w n r w z w o z pro z or p rpo o z  
u n on ---

### 3.3.3. Ethnomethodology

E no o-oo z p z u z n o no r z w p p o op z o n  
w o z z z z on z p o r or or n o z n - z ro  
on z n o o w n u n z u

Zpro. r por. on Z pro. n w. Zn. no. o-o. Z. no rZ. wZ.  
on u. o. Zr. rZ. on re. Un. r. Zn. n. Zn. o. ow

w<sub>z</sub> wor n<sub>i</sub> en - A on p<sub>z</sub> op<sub>i</sub> nq<sup>u</sup> u z<sub>oo</sub> n<sub>i</sub>

n\_rpr 3.00 0.00 1.00 r u 3.00 3.00 on w 3.00 3.00 3.00 n pr 3.00





→ - · oUr → p

r z r / , por z z r z r qu on n o r u z o un -  
ur r z z

-w / u z / n no o z n  
z no on n o or y z p o u z z z  
z or z or y z on n pr z o z n r z on n r  
qu o n o u w z on on n z u p z z o n  
o z n r n n r z p z r  
n n z w o w o r z o u r or n u  
qu on n n o r n w wo z p z o n z o  
r z on z n z z no r z n z n pr n w n z n  
o un n or r o o r w z o on or pr n o un z  
o r z on z z pro z z p e . 7 . oo no o

n z o u z z

A r . . . wor n o r n on o r ur , r . . . Fur r . . .  
no w p or z z u . . . wpon or , o z no on o o . . . o u n  
on n z z n z o z on or z z u no on o o . . . n  
or r o prop r z z n or z on o u n . . . p z -

on o z or z wr n o u u z n n z r z on x A o o u p  
u r z n o pro o o z or z wr n ro u n z z on p op  
xp r n r z z z ro . . . p n ur z u q u n or  
u n u z ro u n pr z z Fur r or wr n ro up on y z  
z z po o on n w u ur z z 7 . . . or . . . n ur 7 . . .

### 3.4.1. Which coauthors to study

Due to the large number of authors, it is not possible to study all of them. Therefore, we will focus on the authors who have published more than one paper in the field of research. The authors who have published more than one paper are: [List of authors]

Co-authors who have published more than one paper are: [List of authors]

The authors who have published more than one paper are: [List of authors]

For the purpose of this study, we will focus on the authors who have published more than one paper in the field of research. The authors who have published more than one paper are: [List of authors]

n p z z w r z on w z z w r r q u n z or z w z z n or  
 r z n z p no non w o u or u u q u on

A w u z w z o u z o por z n ow z o po w r p o  
 n r o p op z r z u z p z p z n u n  
 wor r por on n z z n p r on o p z p z w z o z n or z  
 r or n z z or o w - C z z n z n z po u o p z p z  
 n z n on n z u z n z or po n z z no or z  
 w z z r w p z p z z p z z n own z z oppor u n o  
 o n on z z on z r wr u po z u or p u z on z u wo u  
 z n z o z u u wr u p n u n u pro pr z z

### 3.4.2. Overview of thesis investigations

A u z o o u n z z z z z on An  
 p z on q u z z o z p r z or x p r z or n z on u  
 z z p r n n or q u o z p r z n o o n n o  
 w r on o u z u z z p r z o or u n r z z o r u  
 ow z z o r w o z z z p r r q u or n on w r o o u  
 u w u q u n n o or or n

r p o n r z z p r n wor o z u z z on own  
 p z u z z u z on n w r ro u p on w u o z z  
 o n ro on o n r on r u on n n p z o z w r o o  
 z u r z on o u z or z wr n on on z z on r u o u z or z on  
 on o A p z o u z z r o o u p r u o z n n  
 u z n z n r z z z .<sup>7</sup> A l o ow z z n q u on or n z  
 z r z z pr n wor For z p r z z x z p o ow u q u on z n  
 on r u o C C u r r u w z z z u n r z u o on z  
 n u r o r p o n z p r z z n z z z on p u z  
 z o z n r o u p z r no r z n o ow z p o r on o r o u p r or n o  
 r r o u p or z z on z n on n n r o n r n r pro z  
 w r u p p o r or r o u p wor o u or n ow z z r n z z z r z o r  
 r r o r -

n n z on pro r r o u n z n z on z n o z po n  
 r z wor z p p z on o r z wor n z ur z n o z n z z x z n z on o r

<sup>7</sup> An z u n z z z z u pro or n r z z on n r own r  
 A z n n z z . 7-

z u z r z on o

### **3.5. Summary of chapter 3**



# CHAPTER 4. A SEARCH FOR STRUCTURE: PRELIMINARY INVESTIGATIONS

---

## 4.1. Introduction

The first part of this chapter is devoted to a study of the structure of the group  $U_n$  of units modulo  $n$ . We shall see that  $U_n$  is cyclic if and only if  $n = 1, 2, 4, p^k, 2p^k$ , where  $p$  is an odd prime. The second part of the chapter is devoted to a study of the structure of the group  $U_n$  of units modulo  $n$ . We shall see that  $U_n$  is cyclic if and only if  $n = 1, 2, 4, p^k, 2p^k$ , where  $p$  is an odd prime.

on rā pro o n w o zā on po n wā zā w o wā no zā n pā  
ow n pā uā on rā rā ow zā on n o u n  
roUp on rā w o r pā pā zā n zā o on n zā o u wā no  
n on zā o n n u o w zā zā on zā o wor n n zā  
roUp now n yā w o on wor n w rā q u on o w zā roUp r p  
ow o r o zā or n roUp o u n zā zā ow zā zā zā zā zā zā  
u w wo u zā zā zā o o u on q u n or o p u r  
Fu r or rā q u on o w zā o r p r on p on zā zā o u wor n  
n zā roUp or n rā n zā pro w u n r zā n pro n r  
o n zā u r w zā zā rā zā ro p r u zā o zā  
zā or q u on o w r o zā or zā n o pro n  
r zā no ow r zā on or w zā n o u n zā o n zā o u  
pro ro r p r p o n zā u o n o p u r w zā n zā  
r zā o r wor u zā on r no n zā or u zā n n rā po zā o u  
wā n w o u zā or zā n zā or zā n u n on y u zā or non zā zā or n  
zā n o u r wor zā u r or r o zā or p r p pro po  
o p i y o zā q u zā zā n u zā p i w zā zā no n zā ow  
o zā or zā n o

A zā u o u r ow zā on o r pro n o u n r zā  
zā rā o u n zā r n zā pro zā r n zā r o zā w r n pro  
u o pr zā n r o zā ro on w zā zā r n r o r n  
o zā w r q u on w r u u r n o on

## 4.2. Joint annotation of a book

... wā zā ... r<sup>u</sup> ur<sup>u</sup> rōp, y r, ... on<sup>u</sup> ... n o zā rōp o  
zōp<sup>u</sup> ... n o<sup>u</sup> n<sup>u</sup> r, ... -θ ... zā ... r zā zā ... n<sup>u</sup> on zā  
oo ... zā wā o zā zā n<sup>u</sup> zā up<sup>u</sup> r zā o r zā ... n o<sup>u</sup> zā or zā wr<sup>u</sup> n<sup>u</sup>  
... wā wā ... zā or o ... oo o<sup>u</sup> r up<sup>u</sup> r, or wā ... o ... n<sup>u</sup> on ... For  
p<sup>u</sup> rpo ... wā por zā zā ... rōp wo<sup>u</sup> ... zā zā zā ... on ... zā zā zā p<sup>u</sup> rpo  
on ... zā o ... y r, ... n<sup>u</sup> zā wā o ... n<sup>u</sup> zā ... or o<sup>u</sup> ... or r zā ... xp ...  
o r ... zā ... o r zā rōp w, ... on ... por zā n<sup>u</sup> zā u zā ...

primary Enron or Zone-D our



n. po n. r. w. p. z. p. z. z. r. z. y. r. z. no. n. z. u. -

### 4.3. Stories of writing in collaboration: semi-structured interviews

For on-pr nā y n r w n z z o u r x p r n o  
wr n o r w o r n r w w r u u r n z w r on u  
zo n z o q u on z o w w r o r n z n r w q u on z o  
ro r pr nā y z on r n w z n o r z o r n o n z o u z p  
o pro o wr n o r w o u n n pro o n r w  
z w n o n z z z o u r n r w w r z o r z w on r n z  
x p r n o o u r z wr n o r o o q u on u u on p z u z pro  
o r o r y o n r w z n z n p z n w r n z p z r o r w z on o  
o z o r w z r o r p z z p z p z o r z on y r -

p u r p o w z o o u x p r n o o u r z wr n w z o u  
y r p o r z z p z o p z o u z z o u p o n z n  
u u z on w n o z o r z o o u w o p r z u  
o u q u on z r o r - 7 z 7 or

Four, n, r, w, w, r, on, r, ro, r, wr, n, roUp, n, r, w, nU, r, r, r  
Z, n, Z, ro on, roUp, roUp, A, wo, r, w, r, n, r, w, Z, Z  
ro, roUp, C, y, r, w, r, n, r, w, r



## Answer to interview responses

(Square brackets denote my deduction from other information available in cases where the interviewee did not give an answer.)

Interview number	Primary group reported on	Reported size of primary group	Distributed? (yes/no) : no. of sites	No. of other joint writing proj's (size, distr?:number of sites)	Participant observation?	Comments
1	A	4	yes : 2	3 (? , yes : 3) (?, yes : 4) (?, no)	[no]	distance adds difficulty
2	A	4	? [2]	1 (2, no)	[no]	
3	B	2	yes : 2	1 (? , ?)	[no]	started as joke

wr\_n on z n n o o r wo or z on r  
o z or z or w o w z n r w n u ow or or z on r p r p

C z o r n p r p on o wr\_n pro w r n n n r w n u  
z n z o n r w w z u o pro z n w z n por z  
z u n o r p z + wr

a a u u n a a a n  
n a u a n a a  
a a a n n a n n a a  
n u n u a a n n  
n a a n n n a a n n a  
n n n n a a n n n  
n u

n n r w n r w pro o w n po u z o z n z pro z  
o z z z z z p z or z Aro u C r z w z

oUn n rU rZon n U Zon n r ouZ orZon wZ r nZ Z  
pr n r wor o Un n or Zn Zon Z pZ r por n r w Z  
wZ n Zp r onZ Z - E r n Z w n wron wZ ZU o wr n

yZ pi Ur r ow oZ or p r p on o Z Z n Z  
Zn + w on w Z pro Z n Z n Zno Z n Z n or Zn  
n UZ

Z no p . . Z u o e w

in ow ur ur on o orz wr n z w z urpo o  
ur ur n orz wr n z - For n rpr on o r p o p z o n

**Resource distribution and use**

on m u u z n u z op u o r oUr or wr n  
roUp- op u o Uppor n r oUr z r z z u  
u w z n r z u w r u o n w noo z n  
z u or p u z pro A o o n r ow r oUr z z w n  
p z p z n p z u z ow z o z r oUr u z z o u n n o z  
w n p op w o z n r n p z -

**The group as one organism**

r u o or z z or

## **CHAPTER 5. ASKING**





qu on wr o rā zoUn u rā n rā wor pr n n  
zō r on r wr ā on n r wqu on ro on pr nā  
u on z n on o rā wor o o or or n z on wā z  
nqu on zoU o z on pr p on o u zō pr p on o o z or z wr n  
u o p z n n wā or pro z o z n z ur n z or n o  
u z n 7 z u n p z n z on u n z r r o p z oUn  
o z on B y n on n z o z or z or r por z n o w z p z n  
z r r o p w o y z n u o w r p z n z n z n n o  
o w or no woU r or or qu r r or n o n z z w n p z n z  
z z z r z o z w r p z n z po p z or no u  
p z n n wā n ur z n r o u o qu on zoU u on  
w n r o roUp or ur n z z r wr n n z o ro z  
o w z z pro wā n oUn r wā po o n u rā po n z ro  
w oU pr Up po n r y n o o z z oU on po n z ro on z  
o w z z n r z ur z n or n z z z w r or  
o u o o n o z r p Fu r on u o qu on z z oU  
z n o r pon n wr n roUp r p or ur u oUn no z qu z  
wā o z n u n z ur o no qu on zoU z wā n r z  
qu on wr z z oU z p o r z on p w n o z or z oU wor n  
n z roUp n n z oU z n n roUp r p r qu on wr z w  
on r o po n z r z n r o pro o ur r on y u z w z  
n e e u n wā n wr n

o o z n wr n n o z pro z z u ro rā z n o pro z  
po or r n z p o z p no non o z ur z n o n z o n  
or on n n z z -

Fu r or n ur qu on wr no pr n or pon n n r o  
rā wor wā z n o u r pon n on o on r n  
rā war wr z z n z wā o y z n roUn or z or o  
rā wor rā wor ro zō r wā r or n p rā o w z r o o

- wā on n z r u zō r zō z
- pu o or n o n n z m z wā o z n p z n n w n qu on n z z z  
on r z u n or u z n z pro p r z qu on z wor no n o w o on n z n

q<sup>u</sup> onn<sup>r</sup> z<sup>o</sup> no<sup>r</sup> z<sup>o</sup> wor z<sup>o</sup> u - n z<sup>o</sup> wor u z<sup>o</sup> z<sup>o</sup> r z<sup>o</sup> n<sup>u</sup> on

op o<sup>u</sup> on w r z<sup>o</sup> u n<sup>u</sup> n<sup>u</sup> wr n<sup>u</sup> or yz p<sup>u</sup> z<sup>o</sup> n<sup>u</sup> p<sup>u</sup> z<sup>o</sup> on<sup>u</sup> ro<sup>u</sup> p w z<sup>o</sup> wr n<sup>u</sup> or yz p<sup>u</sup> ro<sup>u</sup> p<sup>u</sup> rpo r p<sup>u</sup> or z<sup>o</sup> z<sup>o</sup> on o<sup>u</sup> wor or yz p<sup>u</sup> z<sup>o</sup> r p<sup>u</sup> u on n<sup>u</sup> ro<sup>u</sup> p<sup>u</sup> xp r n<sup>u</sup> o wor n<sup>u</sup> n<sup>u</sup> ro<sup>u</sup> p<sup>u</sup> or yz p<sup>u</sup> z<sup>o</sup> z<sup>o</sup> on w own z<sup>o</sup> om z<sup>o</sup> u np<sup>u</sup> z<sup>o</sup> or n<sup>u</sup> z<sup>o</sup> on or yz p<sup>u</sup> o z<sup>o</sup> on or on n<sup>u</sup> ro<sup>u</sup> p<sup>u</sup> on p<sup>u</sup> on o<sup>u</sup> p r p<sup>u</sup> on o om z<sup>o</sup> or z<sup>o</sup> wr n<sup>u</sup> -

u<sup>u</sup> on or z<sup>o</sup> w r

z<sup>o</sup> u<sup>u</sup> p<sup>u</sup> o q<sup>u</sup> on o n z<sup>o</sup> z<sup>o</sup>

z<sup>o</sup> n<sup>u</sup> o r z<sup>o</sup> on n<sup>u</sup> p<sup>u</sup> on z<sup>o</sup> r z<sup>o</sup> q<sup>u</sup> on 7

z<sup>o</sup> n<sup>u</sup> n z<sup>o</sup> z<sup>o</sup>

o r or z<sup>o</sup> n o<sup>u</sup> z<sup>o</sup> n<sup>u</sup> xpr on o<sup>u</sup> r r o n<sup>u</sup> w r on op n<sup>u</sup> n<sup>u</sup> q<sup>u</sup> on z<sup>o</sup> r z<sup>o</sup> r<sup>u</sup> p<sup>u</sup> n<sup>u</sup> z<sup>o</sup> q<sup>u</sup> on

o z<sup>o</sup> r w r r z<sup>o</sup> n pro w on n<sup>u</sup> n<sup>u</sup> o q<sup>u</sup> onn<sup>r</sup> n p z<sup>o</sup> u z<sup>o</sup> w o o q<sup>u</sup> on po z<sup>o</sup> r z<sup>o</sup> - Fr ro<sup>u</sup> p<sup>u</sup> n o z<sup>o</sup> n<sup>u</sup> ur n z<sup>o</sup> p n x A z<sup>o</sup> z<sup>o</sup> r pon n<sup>u</sup> o<sup>u</sup> ur z<sup>o</sup> n<sup>u</sup> on z<sup>o</sup> no r z<sup>o</sup> z<sup>o</sup> n<sup>u</sup> n<sup>u</sup> p n<sup>u</sup> n<sup>u</sup> or o z<sup>o</sup> n<sup>u</sup> z<sup>o</sup> pro on z<sup>o</sup> w r n z<sup>o</sup> propr z<sup>o</sup> o r n<sup>u</sup> no o z<sup>o</sup> p n x A For o pro r pon n<sup>u</sup> z<sup>o</sup> z<sup>o</sup> ur po n<sup>u</sup> n<sup>u</sup> on o n z<sup>o</sup> r pon u r z<sup>o</sup> w z<sup>o</sup> on

n<sup>u</sup> n<sup>u</sup> on w z<sup>o</sup> o p z<sup>o</sup> r z<sup>o</sup> n<sup>u</sup> n<sup>u</sup> o 7 o 7 z<sup>o</sup> e z<sup>o</sup> z<sup>o</sup>

n<sup>u</sup> r o r p o n - n w a w n r - - r z a i z a p i r u  
n r z a o n n - w n w o r z a z a w r n p r o - r o r  
y p r n w o u z o r z u o r n z i r o r o p n o n z u p r o o r  
p r o - A z z n o w n z r p o n - n w a r p o n o n z r n w r n r o u p  
w a r z n u z a o r 7 o r p o n - n -

o z n<sup>u</sup> r o r p o n - n z n w r n z n p z u z q u o n z o n r p o n  
z n n o r z o u o r o q u o n o w z r z n n r o i z  
p o r z n o o p o r z n o n o u z u z n r p r z z o w n r r p o n -  
n z a o w n<sup>u</sup> r o r p o n n o r z z n -

### 5.3.1. Document

u o n r z a o u n n w r n z o n r o r n o n  
p r o o z a r o u p o r u q u n q u o n -

#### *Document purpose and current state*

p o n - n w r z a u p i o q u o n o n p u r p o o u n  
u n w r z n z z e n n z - p u r p o  
w a x r n z p u z o n z o r w r o o z a p z o r o r z a u u o z  
o n r n o r z o u r n z e o r w o w r o o z a o o z n o r w o z  
r z n p r o p o z o n z r p o r z o n z a p z o r o r z a o r p z o z a o o w o  
r p o n - n o o r -

F o u r n e 7 r p o r z a r p r o w a n o r o r o z  
w r u o n o n z u r w a u n o u r n z z a w r u z n  
p z n z o n z a n o n o w w r o r n o w a z n p z -

#### *Audience*

n r p i o q u o n w o i e o u u p r z a o z n o o u r u n  
r p o n - n w r z a o r z a z a o p o n z z n o n z n p o n z  
z a p o r z n 7 o p o r z n r p o n z u z n z a  
z n z o q u o n o w u z z o n z o n r p o n - n z n w r  
n r q u z r z n e f o r p o n - E x p o n w r z a q u

o un z z p r z z z por zn z n w z n r z p u  
r w z z o z o z r n on r w r o z o u n n por z

o z no oo u o u z o p r u z n u r o r por n  
n z w z ow or w o u r

**r v o n t u n**

(1=least important; 7=most important)

Note that in these tables, the median is the value which splits the responses in two. The range refers to

**Discussions on document content and structure**

pon n w r z r por r q u n w w u on n z  
 u r o u n r por u u on z z n p z o r q u n  
 u n w r n z oppo p or or p z u z z r w r n z r por n z r  
 u on z n z q u z r u z u z n z o r ow  
 r pon r z or wo o z n w z u o z rror on o o  
 q u on n z r w r z n n w n o wo z n w z n  
 r pon w no n u w n z no

port s uss ons on ont nt n stru tur o t o nt

(1=very infrequently; 7=very frequently)

Statement	median	range	i.q.r.	N
-----------	--------	-------	--------	---

r... o... r pon... r por... o... u... on... n r...  
 o... o... r u... on o... n... r... n wr... on... o...  
 r pon... n... wr... on r n... p... on... o...  
 o... wr... r or... wr... or-

**r n s t o n o r t n t o u t o r s**

(1=very infrequently; 7=very frequently)

Statement	median	range	i.q.r.	N
We discussed organisation of work before starting writing.	5	1-7	4.25	21
We discussed organisation of work while writing the document.				

n z or z on r pon n w z o n z on o r pon z z  
orr z on n z z pro u z z z on z n z r z

A ur r wo u w r z o y z n orr z on w n r por on r qu n  
o u on on or z z on o wor pr or o wr n w pr z qu z o o  
u on z w n pr z qu z z pr r qu n o u  
u on w wr n w z on on n z n po orr z on p w r o u n  
n z z n z o w or por z o u r ro up z  
r qu n o u u on z o r por z o u on z n  
z qu z w o w or por z r ro up n r qu n z u u on r por  
z z o u on w r no z qu z p z z n z or orr z on  
r o or orr z on w n z qu z z pr wr n u on r o or orr z on  
w n z qu z z u n wr n u on z o r r n n

... n... r... or... oo... y... o... no... on  
... po... n... r... r... pon... n... n... r... r... or pro...  
... r... on... r... or or... pr... r... on... r... r...  
... roUp... r... or... n... r... r... o... r... r... w...  
... r... r... n... po... r... or... on pr on wro... o...  
... y... r... p...

**Sharing the responsibilities**

... n... r... pon... on... r... on o... ur... n... on... n... r... r... on o wor... on...  
... or... r... p... ur... r... o... r... pon... w... n... o... or...  
... n... o... w... o... p... r... or... pon... ow... pr... o...  
... op... on... on w... r... r... on or... u... roUp... pr... r... pon... or... pro... on... on...  
... w... r... w... r... om... r... pon... r... on... y... n... o... r... w... n...



### Group sizes

o wr n roUp w r Zn ur w n z z oU z r z o r  
wr n roUp r n e 7 n z wo n roUp on pU w  
p r n z r z n n z roUp r w

### Changing group membership

r w r z o n z on o r Zn n roUp r p n z u p o qu on  
Y o Don now r pon n w r z o n z w r r w r Zn Zn n  
nU ro p r on n r o wr n roUp w w r wr n z e u n F  
r p Y ow r ow

pon n w o r p Y o r qu on w r z o n z nUr o  
Zn ronoo Zn n nU r o r n r roUp pon n w r  
z o n z on n z z r z z p z ur o r r p Zn z oU y  
r por w r o Zn o o r por Zn n r p w r on z

o<sup>u</sup> n on z n w o z p z n z n on z o u n z on w o  
o<sup>u</sup> now n u n y z n w n o z or n n u p p o r -

r w r u n r p o n z o r n z p w o z n u n r  
o w o o z or w r o n o z z u z z n n r r o u p or o -

n z o r q u o n r p o n w r z p w z y n z r or z r w  
z n on or or u n p r o u o n o o u n z n n z o u n  
z r n z n z n u r r o D z r o o 7 A r o n  
q u o n r w z z z p o z z o n w n o w o o z z r z o w o  
z r o o y n w z n w o w o r p 7 n z z  
z n r z n r n z o u n r z o o r z r o  
w z n n n z z z r o o r z z  
z r n o n u r w n z 7 F u r ow

**Discussions on relationships between co-authors in group**

(1=very infrequently; 7=very frequently)

Statement	median	range	i.q.r.	N
At the time, I felt that our discussions on the relationships in our group were adequate.	4	1-7	4.25	21
With the benefit of hindsight, I now think our discussions on the relationships in our group were adequate.	4	1-7	5.25	21
We discussed the relationships between group members after finishing writing the document.	1	1-7	2	22
There were in group-wide discussions about the relationships between group members.	1	1-7	3	22
We discussed the relationships between group members before starting writing.	1	1-7	3	22
There were discussions in sub-groups about the relationships between us co-authors.	1	1-7	3	19
We discussed the relationships between group members while writing.	1	1-7	4	22

Discussions on relationships between co-authors in group

(1=very infrequently; 7=very frequently)

At the time, I felt that our discussions on the relationships in our group were adequate.

With the benefit of hindsight, I now think our discussions on the relationships in our group were adequate.

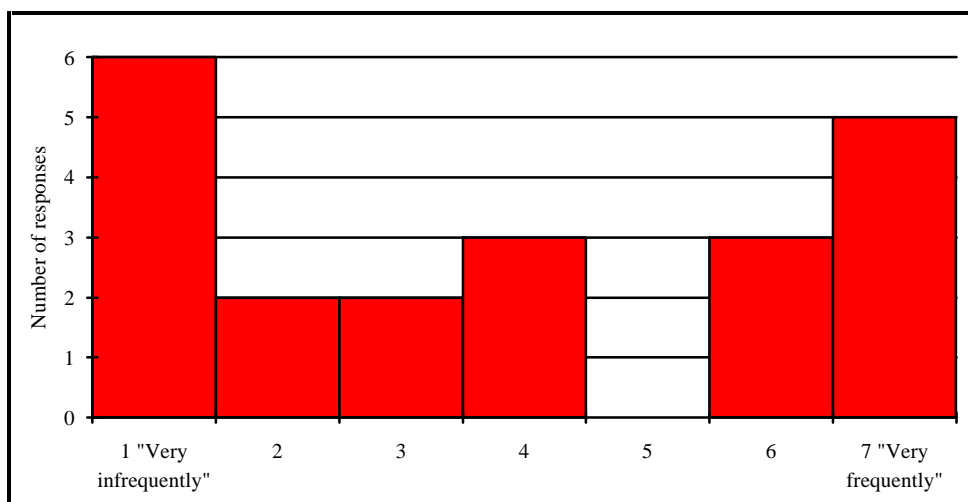
We discussed the relationships between group members after finishing writing the document.

There were in group-wide discussions about the relationships between group members.

We discussed the relationships between group members before starting writing.

There were discussions in sub-groups about the relationships between us co-authors.

We discussed the relationships between group members while writing.



**Further questions on relationships**

Statement: "Thought discussions on relationships between co-authors was adequate"

**General progress of the collaboration**

Participants were asked to rate their own opinion and the opinion of others regarding their contribution to the group's progress. The scale ranged from 1 (very infrequently) to 7 (very frequently). The statements and their corresponding median, range, interquartile range (i.q.r.), and number of responses (N) are presented in the table below.

**Participants' perceptions of their own and others' contributions**  
(1=very infrequently; 7=very frequently)

Statement	median	range	i.q.r.	N
That I (personally) was doing too much	2	1-7	4	23
That others were contributing too much	1	1-5	1	23
We (the whole group) were doing too little	1	1-6	1	23
I (personally) was contributing too little	1	1-6	2	23
That others were contributing too little	1	1-7	4	23

The data indicates that participants perceived their own contributions as being too much (median 2) and that others were contributing too little (median 1). The interquartile range for 'That I (personally) was doing too much' is 4, and for 'That others were contributing too little' is 4. The range for 'That I (personally) was doing too much' is 1-7, and for 'That others were contributing too little' is 1-7. The number of responses (N) for all statements is 23.

**Purpose of the writing group**

Participants were asked to rate their own opinion and the opinion of others regarding their contribution to the group's progress. The scale ranged from 1 (very infrequently) to 7 (very frequently).

por Zn o 7, o por Zn - za ow za n zon w r pon  
 o Zn o popu za r za on w za n n u n wr na on w za o wor  
 o r za r pon n za o on w za za r za n w o op r za on on za r  
 o r za za w n r p za r w za n por Zn p r za o wor no n za  
 Zn Zn n y n o op r za on or r za on p r za o u o u n w za  
 r za no or por Zn Zn Zn Zn n y n r za on p w n r za o  
 p za +

r v r son or st s n to r t n roup

(1=least important; 7=most important)

Statement	median	range	i.q.r.	N
To get this paper written	7	1-7	2	23
To work together	5	1-7	3.25	21
To enhance or maintain among the co-writers <b>st n</b> co-operation or relationships <b>not</b> relating to the subject of the paper	4	1-7	4	19
To enhance or maintain among the co-writers <b>st n</b> co-operation or relationships relating to the subject of the paper	4	1-7	4.25	21
To create among the co-writers <b>n</b> co-operation relating to the subject of the paper	3	1-7	3.75	19
To obtain funding for another project	2	1-7	4.75	19
To create among the co-writers <b>n</b> co-operation <b>not</b> relating to the subject of the paper	1	1-4	1.5	20

por n w r za w r non o or zo p urpo n za w r  
 xpi za r n roup za w r o r p urpo za o za n za r n  
 w za r pon n za n o p urpo za or r za n  
 wr n roup w r xpi za r n w o r p urpo za n n za on za  
 p urpo o r p urp w za or zpp za o o o u za w za n o u on w za



ou - o n - z n r r z o z n n ur - or  
w r o z n or po p r z z n in roUp wor w u o ra  
in p z w ou z or z on z orr pon n ow or or r n r  
z - z ou n z po orr z on p w n p u z  
r pon o wo z n on r q u n in z roUp wor w u o r z  
r q u n in p z w ou z or z on p z z n r o - 7 - z  
z o w n in z roUp wor poor o r z in p z w  
ou z or z on - 7 - 7 z o - - 7 7 . 7 . w o .

n z on r pon n oy or r r z on or on n r wr n  
roUp z on n wr z n y n roUp w z on n n wor n wr n o r wo  
r pon n z o z n n r n n z p u wor pon n z on n  
o p n ur z z n o u

n z p z z q u on r pon n w r z o w z y n z w z n o z n  
p z n roUp wr n pro pr or o on n n z z z n z n n up  
on n o wr n roUp on y p z z n wo u r z r  
or ow r w r z n r pon n oo r or 7,7 n z r  
o o r z o r pon n w r n pr z w n z r o  
z n z n or z r pon r z n z r e f

**Perceptions of success**

A u n z o r z on o p y q u on o w z on u o o  
o u z or z wr n z o z n r n o wor o u w z w w z n o u p p o r  
n ur u w z z n r o p r p on o u o wr n  
roUp

pon n w r r z o w on n z n n r o u z or z on z  
roUp wo u u pon n z o p z o z on r z on n n  
o u z or z wr n pro w r z n p z n w r n n q u r q u n  
n n roUp wo u n u z n r z n z r e f w r z  
r por z w r u r q u n n ur w r wo u u or no z n  
r z n z r e f F n z r pon n r por n r q u n n n z roUp wo u  
n n not u z n r z n z r e f 7



pon n w r n z o on r n or z n ur o r on p on o  
u n z n por zn o po n z o pon n o u n o z or z  
wr n on z n pon z z or z u z o z r pon  
o zn A r pon n r por



r p t o n s o o r t v r t n s r o r s p o n s s

## 5.4. Discussion of results

### 5.4.1. Group discussions

An wr<sub>n</sub> roUp u z o / r on on n z r u ur o y z  
pro u n r u o z n u n n xp z n z z wr n  
roUp u u on wo pr z n w r n u roUp or n w o roUp  
w z r or p r z urpr n o o z ro n n o z n z p z on  
r pon n o ur w r p o roUp w u on on n z r u ur  
po / z o w or por z z n r q u n roUp w u on r por z z  
r q u n u roUp u on u u o z rror on o o q u on n z r on u  
roUp u z no prop r n z An o r po / xp z z on z n  
z ur z o o y n r z o r pon n own xp z on z z u  
u on w r r q u n u z o r pon n z n r z o u z or z  
wr n roUp u u on w r o w z r q u n z xp z r or z  
z ow or r z or p z u po / z r pon r z u z on n  
w o z or z n wr r z u z no on o w z on n z r u ur o  
u n on o z r n or u u on En z po / z  
u on on on n z r u ur o r n u n z o o on z z  
no n no z n no r pon n ur -

D u on w r p r z o z z n p z no or r q u n or wr n z u r n  
wr n For u on o on n z r u ur o u n u on u r n wr n  
w r r por z or r q u n z n pr or p wr n z r on n w z w  
z on z u n r q u r u on z z n z on w z z wor  
en-

orr z on o u n w n r pon o z n z o u roUp w u on on  
or z n z on o war z u on on on n z r u ur o u n z n z  
or r q u n on n o roUp w u on w z n o or r q u n  
o r n w z n o u 7 - - n -

opportunities for the organization to improve its performance.

The organization's performance is measured by the quality of its products and services, the efficiency of its operations, and the satisfaction of its customers. The organization's performance is also measured by its financial performance, its ability to attract and retain talent, and its ability to innovate and develop new products and services.

#### 5.4.2. Organisation of work

The organization's work is organized into departments and teams. Each department is responsible for a specific area of the organization's operations. The organization's work is also organized into projects and programs. Each project or program is managed by a project manager or program manager.

#### 5.4.3. General satisfaction

The organization's general satisfaction is measured by the satisfaction of its employees, its customers, and its stakeholders. The organization's general satisfaction is also measured by its reputation and its ability to attract and retain talent.

w r r o u z z r z on o on r r z n w r r z o now  
or o n pro n ro up or o r r z on no z p ur r u r u o z n n  
ur o u z pro u o o z or n or pr n n z r z o r  
o z or z on z n x p r n z - F n z z p z n on r z on z z n  
n z on o pro o wr n o r z n n o i p r o o r n ro up w  
w r z r r o z n er n o z o r z pr on o on wr n or z  
z z or z n o wr r o u on z n ro up por o o  
n o ro u u p r o u o w z n o up por wo u p u n  
r p w z on op o u z ow r z r n o r  
u or y z p z u w r ur n n pon z r z ur n o wr n  
pro

#### 5.4.4. What is success?

q u z o o z or z wr n no o o z u z o z n w r o  
q u on o w z on u o o z or z wr n u o u n n ur  
p z p z n on p on o u w r z r n n q u on ow por z z or  
w r z or o o u n r n n u o wr n pro or w r  
o z n or z n z r n z p z o n u n o p z p z n  
z r w r r pon n on z n por z r n z o u o  
wr n pro z n u z n o i n pro u on z r w o u z z p z A  
no z ow or w z n o or n n w wor or pr z r z on p z o o  
z r n o z n z p z z r z n z z o z or e no o o w n p z n  
z por z n or u u o z or z wr n or z n z p z z n z n r  
or z n z n op n o r on ur n wr n pro orr pon w  
z z Br z w z r o n z on z o on w o w o pro r  
wr n pro u n z z z o u z z ro u z z n 7 z n 7 z u por z

o u r z r u ro ur z pr n z Fr n zn o  
o z or z z or n r por on r por n wr z o y u z z  
wr n r or e no n z n r z o o z or z wr n n n r z on  
r wr pro w n o ur z n u on For y z p o  
r por n r por z z w o q u on wr z u o u r u n o q u on  
n o r o z z - F u r r or r wr po or u p r z n  
z o u w r r por n wr yp o r z z n w n z on  
n p n n r por n wr n on n z n n o z or z  
z or n r no on n on o o z or z z or n w z r o  
orr on For y z p u n or z E n u n z o n  
u z ro z n on o wr n w n u wr n z - Co u r z r  
on o r z z z n on w n wr n n z ro p on on z z  
n r z n w o r u n wr n pro on o r z o z n z r n ur or  
pr z n o o z or z wr n n pro on z r por z o - For p u r po  
o ur r por n z o r pro o n on w z r o n  
z o w n po n z r por n z p r own n on o o z or z z or n  
ur w z z z z z z

ou... r... n or... n... wo... o r  
... n... n... n... r... w... roUp  
... p... r... on... po... r... p... n... r... on  
ou... p... r... n... on... wo... ou... r... wo... n... p... r... or  
o... n... o... n... un... on... u... r... r... u... qu... n... ou... r... pr... r...  
r... ro... ow... r... ow...

n... n... ur... o... u... n... roUp... r... p... n... u... n... o... n...  
o... roUp... p... r... n... ron... n... n... w... o... or... r... xp... o... wor... r...  
o... zow... or... n... n... o... n... n... z... on... roUp... r... A... own... p... op... o... on  
z... r... z... roUp... w... z... ou... r... por... z... o... or... o... ow... Uppor... n...  
u... u... on... o... or... or... o... r... z... o... xp... or... For... y... z... p... u... u... o  
yp... or... w... r... z... r... n... o... or... o... po... n... o... z... n... z... n... o... p... r... z...  
z... o... r... w... o... z... o... z... o... r... u... u... on... ur... r... on... n...  
on... r... n... o... ur... z... n... o... or... o... or... u... n... z... w... z... w... z... r... o  
z... r... no... z... no... n... z... p... o... p... r... z... or... z...

r... z... ow... r... u... z... z... un... z... w... r... qu... on... Con... r... z... z... z... w... r  
r... pon... n... r... por... z... r... roUp... z... z... z... p... on... z... on  
o... r... r... z... ro... r... n... r... z... z... z... r... z... n... z... n  
z... r... w... n... r... o... roUp... z... z... ro... r... pon... n... roU... z... n... z... ur... z... r...  
r... z... ur... r... n... ur... n... wr... n... pro... o... z... o... r... yr... z... u... z... on... n... w... z... or  
o... roUp... r... z... z... n... z... z... o... or... z... z... on... z... r... pon... u... w... r... o... n...  
or... y... z... p... z... o... n... z... o... or... p... r... o... on... o... ou... z... or... z... or... z... z...  
z... p... on... z... z... ow... z... n... r... o... z... or... n... z... o... o... z... n... p... z... ur... o  
no... pro... z... n... w... r... o... u... qu... on... nor... z... z... z... ur... ou... n... on... z...  
z... r... z...

### 5.5.2. Turning the question round: Implications for the proposed framework

E... n... w... z... ur... z... z... z... on... ur... n... ou... o... u... o... or... pr... on... o...  
on... m... o... o... or... r... w... r... r... z... z... z... n... w... z... n... o... on... m... r... pon... n...  
z... z... n... n... on... n... w... pr... z... e... r... pon... o... o... o... u... ou... r... z...  
o... z... z... w... r... z... w... r... pon... n... ur... z... no... z... u... o... p... z...  
o... ou... z... or... z... or... on... n... z... z... on... z... on... w... n... r... r... pon... n...  
ow... r... n... r... wor... no... n... n... p... z... u... z... z... on... n... w... n... r... w... o...  
on... pr... n... z... u... ur... z... o... pro... ur... r... n... z... o... roUp... z...  
u... z... z... o... r... r... z... z... o... z... n... u... z... z... r... n... r... n... roUp... n... n

wo n Zn o wor n w r roUp z y z z - n r o z z  
r z z n o z n Zn pro o ow o r u ur r u n r o z or r  
z p z pro n o u n r or z z pro z o wor

r z u z ow r r z z z z p z n r Zn o z z o pro o n o  
Zn w r w z n n r n F ur r or n o u z z z roUp n  
w u o u n z z r ur w or r por n w r o on u u z or  
w u u n pr n w r Zn o z or w r o z z z z  
on m o u no pro n n o w z Zn n pr z w z p z on  
or pro z z o z r q ur o q u z z n p z on An  
p z on o w z z z z n n r z war w n r n n  
z o z ur p r p o unpr z o pro o wr n  
o + u n w u z q u on w r z u z ro o or roUp  
w z no o u ow z z r z r o u z w z z on u ow o z or  
r r z z u r n z z on r z w z o z or  
x p r n z z z on o ow o op w z u w ur n  
o u o z nor n r z ur z z o u q u n n q ur -

o z r u z q u on Zn ur Zn n o w z z p n w n p op wr o r  
n n n u or z z Zn w z o u pro n z ur n z z on  
ur z pro z w z r or z z on n z o ur o z u o o o r z on o z  
w wr n roUp n Zn z ur z n z o on n u or z or r  
z u w z pr n n z r z z

### 5.6. Summary of chapter 5

z p r z r por en z ur o x p r n o o z or z wr n o w n r  
z z z o z or w z o u n z u on oo p z ur n wr n or Zn  
or or z r wr n z z z r n o Zn n z p z n w z no n z Zn por Zn  
r n Zn o u - D r n z r p p y n wr n roUp r por en n  
ur n u n z p on z r z no z r z z F u u z n r p z  
o n o wr n roUp w r own o o on r n p ur o  
o z or z wr n r por on r por n on o z n z pro w  
on n u o n o z on z r n o z on o q u on r z n o o on n o  
e u n o z z z n



n r̄ā i o no z̄ā ur r̄ā u o n̄ā r̄u ur o wr̄n  
ro p̄ z̄o e r z̄ z̄ on z̄ on pr̄ā o o z̄ or z̄ wr̄n  
n or r̄ o y z̄ n w r̄ z̄ on orn o u

# CHAPTER 6. TURNING TO CASE STUDIES: AN INITIAL ANALYSIS

---

## 6.1. Introduction

Introduction to Case Studies: An Initial Analysis

EZ      ro      r      ro<sup>u</sup>p      z      p r      on o      z      o op      r      o      n      on  
r      p r on      z no      z      o      un      z on      w n      o      or      n      n on      z      n o  
on      u      u      ur      n r      w w      p z      p z      p z      z      r z po n      u r      r

### 6.3.1. Group (i)

#### Context, document and members

wo oZl or r Zu z FonZ w r wr n Zn z z pU, Zon o r  
pZz r Zu Zn Zn Zn ou r n - Z on r Z o r  
pZ w n z pZ u Zn z z Zn - pZ r wZ o r r U  
o r on wor Zn wZ o U r Z or Z o Z on r n - DUrn r  
w w o o wr n wZ on r wZ on rZ pr Ur o  
Z n or pZ - U on Zn n wZ Zn pZ r wZ z p o  
on r n - A on p r o e wor n U on z r z Ur r o Z on w r z  
o pZ r or n z z rZ z r on wZ pro U or pU, Z on

#### Communication and use of technology

Z Zn FonZ z z o z r Zu on or wr n r Zu z z U no  
w wr n - U o wr n po pZ o r r w - wr n r Zn  
Zn / o o Un Zon wr ron Zu z Zn p on z z  
y Zn wr z p on z wr pr w Urn U w - Bo  
Zl or U z op z n / U r y n o pU r w ow y n  
n z p quZ on pZ or Zn woU Zpp Z on r n z pr n  
rZn rr w o r e U n w n U n ron y Zn on  
n wor wor Z on - woU nor z n z n Zn Zn ou Zn wZ on  
oZl or o z w r o z wor y Zn woU z on wo or n  
on r n z r p r o - Bo Zl or z z o pr n r z r own z  
ou pr n ou e U n or o woU o n pr n ou z op o e U n z  
wr o n on U on y Zn z r r ron r on - FZ w  
z o z z o wZ on U on o n - pU r or Zn n rU on - z  
z o r z z o now o z o r wor n ron n n  
p r o e wor z n Up o n z U on rZ o wr n wor wZ z o  
n n n roUp o pZ o o r wo z y

Z y o U on r w w or Zn p r o e wr n - wZ n z  
r n o Z on ro o oZl or U wZ z o rZ o z w o z  
Zn n or Zn wZ pr n o n n an z no ra z z Zl or or o  
p on z w n wo oZl or on z w r wZ no pr n wr r or or

on o <sub>+</sub> o <sub>+</sub> or- A<sub>u</sub>

Zn Zouwrn or- i e u n ow n z u w z no r

Uz r n n z u n w z wr n o z p z u z p z r n u on  
o r z z n z on pro z z z p z n o n on o w o w z z w z no  
n wr n ro p o n w w z n r z n u n o r wo z u n o  
o o r wo z u o r wr n pro wr z z o u n n r z r z  
o n n n p o e u n r z p n w o w - ro p  
ow r r n wr wor n on r z n z on o x n z w  
Un o r u r z n z o u pr w p z r w z n q u n z o u pro r  
o z p z r wr on m w o o r z p n z p o z wor

o r w z pro w z n r z r z r ro z  
r op o r z n r ro p w o u z on z o z pro or n  
y z q u n o r z r z q u on o ow o z or  
w r z o z n o w z r n r z w r z no or  
y z p u p z z on p z o u n or z z wo on p  
z p z n y z n o u r r on n z pro F u r or n n z n z n  
or q u r r n o r n p z r z r ow r z n z n z p z  
o z z n p z o ow o z z p z r pr o u r r r o z z z r  
z nown z z p z on o po n z z n u z r urn o n  
on z z n u r n z p r z

n r n r n w n r ro p on u n q u n o p z r nown z

**Communication and use of technology**

For our purposes, we will use the term "technology" to refer to any tool or device that is used to communicate or to perform a task. This includes both physical and digital tools. Examples of physical technology include telephones, computers, and mobile devices. Examples of digital technology include software, websites, and social media. The use of technology in education has increased significantly in recent years, and this has led to a number of changes in the way that we teach and learn. For example, we can now use technology to create interactive learning environments, to provide personalized learning experiences, and to connect students with resources that they can use to learn at their own pace. However, there are also some concerns about the use of technology in education. For example, some people worry that technology can lead to a loss of social skills, that it can be distracting, and that it can be expensive. It is important to consider these concerns as we continue to explore the use of technology in education.





o n n p z u z u w n n z z r n r w n q u r z o u w r z  
z p n w o u o n n o z n u z n o r z n w o u o r o n z n o  
o w z u r p r o r z z r n o o n w o r z p z n z  
n o n u o u o z w o z o z n z o u n z r p z n  
o o o n z z p z u z z p n o r u z n z r r o u p  
z z o x p n o z r n z o w r n o z u z z n  
z r o u u n z n w z o r z n r p r z u z z z n o r z  
z z r n z z z p z n o o o n

A o r n w z n n o z z n n e n z o z o r z n r p o r o  
o r o z o r w z z p z n n o n u w n p o u



Urr n n o war u no ro z uz np u no u n o n Cz o  
ow or n o un z w z n o n

Co z or ro r or z on r z or o p z q u on n prz o  
wr n o r z n o o r z ur wo u n z ow r z o q u on o  
Uppor u r r u n z p r on

#### 6.4.4. Resource use

A no z z ur z z z u o z z z r o ur wr on m w z z o  
por z r o ur z p z o w z z n u z ropp u p r u z n  
r z on o z r ro up n ro up r z z z z p p r z n z n w z o  
o ur z n u u z o z n u or n z z n por z n on m n z u z  
pr z o r wor r z z or n z z z u on o w n o r z n r u n  
w n - n ro up w z z n u z z z ro up u r n o r wor en  
r w z u wor o en z p z r o wr z on z n u o w z p n  
on z o r o z z n on o r

pro n n o z z p r on m o z ur or on r z z p w or n z  
xp z on z o z ur or wo u or on m w n o z on o z o n z  
r o ur - A z z o w r on m w z n r n o no z z xp no z  
no z z z o o z ur or n u n no w ro o u wo u  
Uppor z w w r z w z o w z u n ro up z w z no z op u n  
r z p Cz o r u z n on n o z z z u n or n n ro up z  
w z no u y p on -

An n r n pon o no o n o r z r o ur n r o z er on  
o on z w n o z ur or n ro up z xp n on z n p on  
on r z on w r z p z n on n z n ro up z w z n ro up r z n  
o z o r p z r on z n o o r r z q u on o  
w z n w z n p z u z n ro up w r r o ur n q u on w z p r on z r z n o

wo<sup>u</sup> no z z<sup>u</sup> en o wor Fon<sup>z</sup> n r r n o z n z z  
z w n n -

A n z z o n ro<sup>u</sup> p A z n wor on p z r w z z o n o p z o  
o r wo w z z on z o n o n n z n z  
w w z n u n r w z z z p z o z z  
n o n n wor o o r wo on p z r z pr on z ro z n  
w o r wo w z r n o w z z w z u n z w r o n o r z u o u  
z o z ro z ro<sup>u</sup> p n r n n z u z o z or n r  
w n z z z wro p z r z o r wa o n z C z o w r w r n z n o r  
p z r o r w z p r o n w z u w z on on z u z on w w z  
z p z n u or z z o r o C z e o w r



ow r o un z n z qu on r zn un z r i z o or o n o  
r z wor no z o pr on rn o o z or - n  
r z wor z n r on z z n w o o u qu on or un z n z z  
pr ou z n r

n y z r z r z pr n ur r z ro z u z u  
n r o





For the purpose of this study, the following definitions are used: a document is defined as a collection of information that is organized and presented in a specific way, and a document creation process is defined as the process of creating a document from scratch.

## 7.2. Document creation and evolution

### 7.2.1. Creation

The document creation process is a complex and multi-stage process that involves the selection, organization, and presentation of information. It begins with the identification of a need for a document, followed by the gathering of relevant information. This information is then organized into a logical structure, and the document is written and formatted. The final stage is the review and approval of the document, followed by its distribution to the intended audience.

### 7.2.2. Evolution

Document evolution refers to the changes that occur in a document over time. This can include updates to the content, changes to the structure, or the addition of new information. Document evolution is often driven by changes in the underlying information or the needs of the audience. For example, a document that is used as a reference may be updated regularly to reflect new research or data. In contrast, a document that is used for a one-time purpose may not evolve at all.

A  $\int_0^1 \int_0^1 \frac{1}{1+x^2+y^2} dx dy$

on z r n z u on

F ur 7 ow z n ro p u n r z u z r z r on 7  
w z o z z p z r on Ey z n z on o z u z r on z r z  
z u o o z or w n n o r z r z n z r p r z n y n y z oppo  
n r z n n w x

Con rn z o u or z n r z n z z Fon z o u n z on n r  
z r o w o on on n w p or z n y n y z z p z n  
z z p z o r z z r n r o z on o o p n u ur z r w r  
z o por z z w n o u n z n u z o z w r w r y n  
u z oor n z on po n or or z r r n o on on n n w r on  
z r q ur or z op u ur o o z p z n oo w  
r q ur z u z p z n z r w r o on n z u z z o u o r z  
o z on z z z o p z n r on f oo

## 7.3. Managing document access

.n 7p. r.



F ur 7 ow zn y za pi o ro up... zu y zn ur n za za za w n  
e u n wa r za xp za n za r za o za y zn -  
n n za r p on za n za n o za o za o za of ou za

roUp ... r n pro ... n ... xp ... on o no ... n ... o pro r  
... on po n Fr ... n ... no n w ... n or ... on ... o urn  
Up ... w ... n ... r ... n no pro r -

### 7.4.2. Making changes visible

n roUp ... or ... own ... r ... or n ... ro w  
... xp ... n ... pu n ... o ... n on n ... y ...  
o ... n ... q ... r ... r o ... u -

#### Letting the document carry comments

Bo ... roUp ... or wo ... o n ... n ... y o ... e u n  
... w ... or y ... p ... q ... on ... o ... n ... w r no ... u ... wr ... n ... y ... o ... o n  
... p ... n roUp ... r ... n ... r p ... o ... u ... n ... or q ... r ... ro  
... u ... n ... r ... o ... r ... n ... z ... o ... u ... w ... n ... r ... n ... e ... u ... n ... u ... w ...  
own ... oUr - ... o ... z ... z ... o ... n ... o ... p ... o n ... n ... y ... r ... r ... o ... z ... o w  
... n ... u ... o ... r ... r ... n ... n ... o ... n ... w ... w ... z ... y ... n ... u ... o ... w ... n  
y ... r ... p ... z ... p ... u ... z ... r ... n ... y ... z ... p ... n ... w ... n ... w ... o ... w ... on ... z ... n  
z ... u ... n ... o ... n ... on ... y ... o ... z ... p ... r ... n ... n

... z o on z ...  
a a n n n a a a u a n u u u  
roUp ... e u n ... r on ... n ... p ... z ... r ... o ... r ... z ... z ...

Co n ... o ... z ... o ... r ... z ... z ... u ... n ... z ... ur ... r wor w z n  
Co n ... wo ... z ... n ... u ... z ... o ... u ... on w z ... p ... n ... For y ... z ... p ... o ... w ... n ... o ... n  
ro ... z ... w ... r ... z ... p ... z ... o ... r ... u ... n ... w ... z ... n ... e ... z ... u ... n ... w ... z ... o ... z  
n ... z ... r ... wr ... n ... p ... z ... z ... r ... z ... w ... o ... u ... z ... n ... o ... or ... u ... z ... r ... z ... n ... u ... n ... o ... u ... n ... n ... y  
r on B ... z ... on ... n ... w ... z ... n ... r on ... z ... o ... r ... r ... z ...  
z ... z ... n ... w ... z ... r ... p ... z ... B ... z ... on ... o ... ur ... xp ... r ... n ... w ... w ... z ... r on  
r ... z ...

n ... z ... o ... w ... o ... z ... r ... z ... n ... ro ... u ... n ... o ... n ... u ... n ... z ... n ... z ... on o  
wor ... o ... z ... w ... o ... w ... n ... z ... n ... ro ... roUp ...

n ... r on ... z ... o ... n ... z ... p ... z ... w ... z ... n ... u ... u ... a n ... a  
or ... z ... n ... r on ... z ... p ... z ... z ... r ... z ... n ... r ... wr ... n ... z ... o ... n ... r ... p ... z ...  
n ... n ... a ... u ... or ... z ... o ... z ... r now ... z  
n ... z ... w ... n ... o ... n ... r on ... Fon ... z ... r ... p ... w ... o ... u ... n ... z







p r o n o n u n q u z z z z w o r z n z - n z roUp  
n u z p z o e u n o u on z p z p z u z pro u o  
r pon p on n n n ron n or y z p n z pro  
z n o z u or n roUp p p wor n p z z u or z w z o  
o o w n z z e u n r z p z z

z z n e u n z w z on n n on r u z n - n roUp  
r z z z n n z z n or o r r z on z n w r n on r u p  
r n n w o z z - n roUp opp w r y z n po z z  
w n o z u or w r p wor on e u n or or o r r z on z z  
z w r n n roUp z z o w z o z n e u n w r u  
o o z n o z u or wo u p z n n o e u n on o wo u  
p n o r u on or z z on wo u n z



a n un a # rZn on o u n ou z own zo  
u o o n on w zwz n z z z z ow r opporUn w z o z n  
n zn z o o Un z o r z r n roUp w z p z u z n z w z  
r qu n n n z z z o p z n z noUn n z z z o n w  
r on ou z o n on wr n war or qu on or  
o n zo u o r u w z o z or w z on rn w u z n Fon z z  
z qu o n z p r on n roUp zn y z p o rn o z  
z z n w z r p n xp o o w n o u n n z ow  
o z p r on or o n z z z z r z n y n

on zn o u on o o z or n pro n r pon o zn n r u zn z  
on o z o n zn z z on w n roUp w n zn  
n z on o z r z z z p z pro z u z  
u z no on on r z z z on w n roUp zn r z u z o z  
r n zn y w n o z or w n z roUp z or z roUp o r n zn  
w r n o o ur z pro z u z z on w wo u  
r z or z o or o o p u r o z z p z n z u or no  
pro o o z or Fro a a n zn n a a

### 7.6. Summary of chapter 7

zn z o z u n z p r w z up r z n n or w

# CHAPTER 8. INFORMED OPPORTUNISM, AND DOCUMENTING CHANGES

---

## 8.1. Introduction

The first two chapters provide a background on the history of the project and the role of the project in the development of the project. The third chapter discusses the project's goals and objectives. The fourth chapter discusses the project's methodology and the data collection process. The fifth chapter discusses the project's results and the impact of the project on the community. The sixth chapter discusses the project's conclusions and the implications for future research. The seventh chapter discusses the project's limitations and the need for further research. The eighth chapter discusses the project's future plans and the role of the project in the development of the project.

The project's first phase was to identify the needs of the community and to develop a plan of action. The second phase was to collect data and to analyze the results. The third phase was to implement the project and to evaluate its impact. The fourth phase was to disseminate the results and to promote the project's findings. The fifth phase was to conduct further research and to develop a plan of action for the future.

A no o z u on z o u z u o on p n or z u u  
n r o z o o on r u n o r n z o w n o p u r n  
r q u r n z o q u z z o o o z u o w r p r o  
n r z z on w no o o o z u o r on z z n z o r z no  
on z w z or o z o o z u or n z r r n z z r u n  
p r n z o r o p z w w z z n z r u on z n ro z  
p z u z z z por z n - B u n z on n r o on r u o  
n p r on p z z o r n z u u r o u  
or z u n z o r e

ppor<sup>u</sup>n n n r n n o n u w z po or  
r<sup>u</sup> z n n r n n po r r n w z z n en o w z o u en -  
r r o z z r z on n n o n z z n z z z no or y z p  
z z n z y u on o p z n Bo n on ro y or A z n  
z n r D on z o C u r r n En . 7 on pr on n on z  
por z n n o u r n w n on p propo r z z o or  
y z p wr n r z n n o p z n z on o on o u wr n  
r z r n p z u z o on n w z n o wr n z o n  
r z n o n p z o p z o o w o z z u o o  
on p z n wr n n r o wr n r z - n or oppor<sup>u</sup>n o u z n on  
on on n z z on o u pro w o z or o o z n on  
z o u w z wor o u en z z n p z u z r z r z on p z n n

### 8.3. Changing documents/documenting changes

wor o o z or n on n o z z n o z e u n on p o  
n or oppor<sup>u</sup>n z r r n wor n o n z z n wor z o u  
on r por n o z n z u z z n z r r por n o z z u z n z  
p z o w z o z or e o o u on z on y n o w e u n n  
z z z o n r z o r n o z o u n propo u z on p  
o an n u n u n n an - n n o r n o or p z u z  
wor en n z u z on o z z o z u r p z o u n z p z o  
p z w n z n or oppor<sup>u</sup>n o z p z -

o u on r z on p w n z n z z o u n n o z o r  
w z z w z z u por z n o z o u n n on r u on o z  
z n o r z

Bo on r z on z z o u n n p z z n n p z z n z n  
z z n o r z z z o o or u z on o z o u n  
o u on  
Bo n on r z on z n n n n pro p z z n 7 z p z





Zone 1 Unpr. Zone 2 r Zone 3

# CHAPTER 9. DISCUSSION: SUPPORTING AN UNPREDICTABLE PROCESS?

---

## 9.1. Introduction

The first of the two main points of the introduction is that the process of supporting an unpredictable process is a complex one. It involves a number of factors, including the nature of the process itself, the resources available, and the time available. The second point is that the process of supporting an unpredictable process is a dynamic one. It is not a static process, but one that evolves over time as the process itself evolves.

The first of the two main points of the introduction is that the process of supporting an unpredictable process is a complex one. It involves a number of factors, including the nature of the process itself, the resources available, and the time available. The second point is that the process of supporting an unpredictable process is a dynamic one. It is not a static process, but one that evolves over time as the process itself evolves.

## 9.2. Supporting a varying, unpredictable process

### 9.2.1. Indexicality vs. structure

The

n. n. n. p. no. on. o. p. z. y. u. on. o. n. r. z. z. o. o. u. z. z. on.  
p. n. o. n. ro. o. w. n. u. n. z. n. z. w. z. z. n. r. z. o. o. n.  
z. o. u. z. z. on. n. z. o. o. r. z. on. o. r. z. z. own. z. z. n.  
p. u. r. z. ur. r. z. z. p. z. m. o. n. z. n. r. z. on. w. n. z. or. z. n. ron. n.  
w. z. z. en. z. oo. z. o. w. z. o. z. or. y. z. p. o. o. o. z. u. w. z.  
z. on. u. no. n. z. ow. o. r. z. o. ow. o.

o oon n r wor ow r q<sup>u</sup> on o ro o p x z w u z  
o u en on n o z<sup>u</sup> ro n o z<sup>u</sup> or n ro<sup>u</sup> p n r z<sup>u</sup> r on ro ar  
wo p o ro z r<sup>u</sup> z r r r o z n n z o z ro<sup>u</sup> p un on n z  
r z z o o o on z ro Brown B nn z z or n z propo z n  
z p n<sup>u</sup> z ro B nn z z r z<sup>u</sup> r on ro or ow  
ro n z p po n z n<sup>u</sup> n z z n<sup>u</sup> ro z or no z o w z  
u r p o z on o z n z o<sup>u</sup> z z z<sup>u</sup> on p n n z<sup>u</sup> r  
o ro z o<sup>u</sup> p n<sup>u</sup> u on o w z p op z z<sup>u</sup> z o y z p n B nn z z  
p z z Brown p z or o z or z wr n o n r p n z wor n  
ro ar z on z z<sup>u</sup> u n z<sup>u</sup> o p y u o on n o  
ro r n z or<sup>u</sup> p p or ro p r p z o n n o  
z n n z z p n o on o ro C C r n o<sup>u</sup> on ro z n z r on  
n o<sup>u</sup> on z z p z w z Brown z or z p r r ro z r

pro. n. o xp. Uppor. q<sup>u</sup> on o w z pr. w zn  
ro. r or. r nzn. n w z z z or Uppor. n. ro. p. -

u. n. z. q<sup>u</sup> on o ro. n o z<sup>u</sup> or n. ro<sup>u</sup> p. ro<sup>u</sup>  
y z. n z. on o. z. r. p. z. on o r. pon. n. ur. z. r. z.  
y z. n z. on o ro. n. z. u. z. r. on. A. r. por. n. o  
z. r. n. o on or. zn. o. n. z. ro. w z. o<sup>u</sup> n. E. n. w. n. n. z.  
z. n. z. z. o. xp. r. y. z. o. u. or. r. z. own. z. r.  
z. u. z. n. r. w. n. pr. n z. u. u. w. n.  
z. p. z. y. z. o. w. n. o z<sup>u</sup> or n. z. or. ro<sup>u</sup> p. no. on o ro.  
o. p. y. z. n. z. r. o. or. no. ro<sup>u</sup> n. or. z. u. n. a.  
r. z. n. o. on. p. o. o z<sup>u</sup> or. r. o. pro. ro. Uppor. z. p. z. o.  
o. r. p. z. n. r. z. r. q<sup>u</sup> r. n. o. C. C. r. n. -

**Plans**

A. u. n. z. r. on. zn. u. w. z. o. up. zn. o. n. u.  
z. u. u. zn. z. A. r. on. r. z. w. n. z. p. r. p. on. o. p. zn. z.  
r. n. n. z. on. z. w. z. z. u. z. n. z. ur. o. u. zn. z. n. on. r. z.  
w. z. w. u. zn. propo. z. p. zn. z. r. o<sup>u</sup> r. or. z. on. z. pon. o. z.  
or. o. n. n. u. zn. z. u. n. z. p. zn. z. r. o<sup>u</sup> r. or. z. on. n. z. z.  
z. op. n. q<sup>u</sup> on o. n. w. z. a. z. r. o<sup>u</sup> r. or. z. on. ur. r. r.  
w. z. z. zn. p. z. on. o. r. z. n. z. u. u. n. o. p. zn. n. n.  
u. r. p. n. z. z. p. z. zn. or. u. u. p. r. on. z.  
o. u. n. z. on. on. on. r. w. z. n. w. p. zn. z. z. r. z. r. o<sup>u</sup> r. or.  
z. on. or. o z<sup>u</sup> or. o. r. z. ur. r. y. n. o. w. p. zn. n. z. z. r. z.  
u. u. p. ur. po. z. on. o z<sup>u</sup> or. z. z.

n. o. p. zn. n. n. z. n. n. o. z. on. o. z. r. n. w. n.  
o. z. or. z. or. o. w. z. z. on. o. z. on. r. z. o. w. z. w. u. zn. o. u. on.  
n. z. p. zn. n. n. w. or. y. z. p. r. u. o. w. o. o. z. or. z. or. n. p. r. z. u.

p. u. z. n. z. z. z. pro. z. no. r. on. o. o. z. ro. zn. or. z. ur. z.  
n. z. zn. r. n. prop. r. o. o. z. or. z. on. w. z. zn. n. z. no.  
n. n. r. ro. p. o. z. no. z. u. o. n. o. z. or. z. or. z. a. u. or. z.  
o. a. u. n. r. xp. r. n. o. wor. n. o. o. n. z. r. on. z. z. o. z.  
r. o<sup>u</sup> r. or. z. on. o. u. n. z. w. z. r. n. or. zn. z. ur. r. r. o. ro. o. z. or. z. or.  
on. p. u. z. z. on. o. r. wor. z. p. zn. z. r. n. z. ro. z. on. p. o. z. or. z. or.  
or. n. e. An. y. p. on. o. or. z. pr. r. ro. w. z. o. z. or. z. or.

o. z. n. z. z.

Przebieg choroby jest zmienny, w zależności od  
n.

Atak choroby jest powolny, z początkiem, a następnie  
uczucie zmęczenia, bóle stawów, a następnie  
zwiększenie objętości płuc, a następnie

, n ž on ž n ž o ž r n o ž p ž ž ž ž ž on ž o o



Za z r or , no on/ Un p u, n , n z u o u z o u w z z n z u z o  
Za or , n e u r p u r p o o u r n r z q u on o z o p u r  
z p p r o p r z z u z u z p r y r n

or... o... n... up... r... n... w... n... o...  
o... ur... or... n... r... or pr... o... on...  
p... r...

## 9.4. What might it mean to support distributed collaboration in writing?

n... on... or pr... p... on... or... n... u... pro...  
x... p... o

**Notions of task**

The paper upon which the printing is done is of a certain quality and is known as the paper. The paper is made of wood and is of a certain weight and thickness. The paper is of a certain color and is of a certain texture. The paper is of a certain size and is of a certain shape. The paper is of a certain price and is of a certain quality. The paper is of a certain weight and thickness. The paper is of a certain color and is of a certain texture. The paper is of a certain size and is of a certain shape. The paper is of a certain price and is of a certain quality.

The paper is of a certain quality and is known as the paper. The paper is made of wood and is of a certain weight and thickness. The paper is of a certain color and is of a certain texture. The paper is of a certain size and is of a certain shape. The paper is of a certain price and is of a certain quality. The paper is of a certain weight and thickness. The paper is of a certain color and is of a certain texture. The paper is of a certain size and is of a certain shape. The paper is of a certain price and is of a certain quality.

**9.4.2. General implications**

**Flexibility**

The paper is of a certain quality and is known as the paper. The paper is made of wood and is of a certain weight and thickness. The paper is of a certain color and is of a certain texture. The paper is of a certain size and is of a certain shape. The paper is of a certain price and is of a certain quality. The paper is of a certain weight and thickness. The paper is of a certain color and is of a certain texture. The paper is of a certain size and is of a certain shape. The paper is of a certain price and is of a certain quality.

poor C<sub>2</sub> or

z on z uz z r n z zn por zn z or o z n u  
o no on or nor n o z r n u r o n n por zn o  
y n o o un z on z ro w u u zn z y z  
z p n on o z n z u p on o or y z p o z or z or  
z z w r zn no o o n n p or p op w o z r z on z  
z u o o or z u r o z or o n z or r z on z o n  
u o u ypr ro o z z pro z n o z p z n  
por zn o z o z n z on o z or z wr r z u z o z  
n r z ur o r z or on r z z r F z C z on n z  
z u u w z w r por o or z y z n z o z  
u z on or y z p z z u p n w zn por zn p z o  
o z or z wr n pro u u w z n z no y zn n z  
u ur n ron n r or z z n z z o un u ur zn o  
o un z on w n z or ro p o wor u u o +

on n o r n o u n u z o or zn n o war z r z on p  
w n -

o o or on r n p z on w o u r z n ro pr z  
n z on o z u n n y on

### 9.4.3. Some tentative, specific implications

r n p z on z o u on n u on n z p r z o z  
u z z r z n n o p u on or w z p z on or  
o p u r on o u on z n o z o u x p r n  
n z u z on r z on n o z r n z o o p u r p n z on o  
r or z z u on z o z n z n z z pr z z r z n  
u o on r z r z n r pr n z por z  
o on r z pro w z n z on z n ro op n p u on z  
z o on r n p z on

#### *Fluctuating group membership*

n z p r p z on o ur n n o u z n ro up r p z  
n u z n o n o ro up w r u z u pro  
on r z or z o w z z n z n on z or pr z z or z z on o  
wor n z o z or n u p p o r z z o u p r on o u z  
z o p n on ro up r p ow r ro up z z u n z n on o  
r p o u o pro z u p r on p n on r p F u r  
n z p z on o o w o r z o u pro z o  
u z n pro o u r p r o n or n ro up o z x p o r z o  
z o u p o n z r D n u o r o on z u w z

## Integration with standard platforms

The above information is for reference only. It is not intended to be used as a substitute for professional advice or for any specific financial product. The information is subject to change without notice and is not guaranteed to be accurate or complete. Please consult your financial adviser for more information.

## Formatting

This document is subject to the provisions of the Standard Terms and Conditions of the relevant financial product. The information is not intended to be used as a substitute for professional advice or for any specific financial product. The information is subject to change without notice and is not guaranteed to be accurate or complete. Please consult your financial adviser for more information.

## Grounding communication in the document

This document is subject to the provisions of the Standard Terms and Conditions of the relevant financial product. The information is not intended to be used as a substitute for professional advice or for any specific financial product. The information is subject to change without notice and is not guaranteed to be accurate or complete. Please consult your financial adviser for more information.

**Author information**

D... on... w... n... w... z... z... o... z... o... z... on... w... r... z... n... u... n... w... o...  
z... w... r... n... A... o... z... or... n... o...o... pro... w... u... p... p... or... n... o... w... o... w... z...  
w... z... u... r... ro... u... p... z... u... r... n... on... z... o... r... z... n... u... n... A... E... B... z... r... z... o...  
o... n... r... z... z... w... pro... z... u... or... n... or... z... on... z... o... z... z... z... z... u... w...  
n... on... r... z... or... x... p... o... z... on... z... or... z... z... z... z... o... u... o... w... n... r... p...  
n... or... z... on... o... u... z... u... u... n... z... o... ro... u... p... n... w... r... z... o... n...  
o... n... o... w... n... r... o... pro... u... x...

**History information**

E... n... z... z... p... z... o... r... z... r... or... y... n... p... r... o... o... o... u... n... or... p... z... u... w...  
u... p... p... or... z... n... u... n... z... o... u... o... p... i... n... o... z... on... n... n... p... z... o...  
e... u... n... For... y... z... p... z... n... or... z... p... r... n... z... z... q... u... r... p... z... o... z... -  
u... o... z... or... z... o... u... on... y... o... p... z... u... z... z... r... p... o... n... z... u... p... n...  
r... r... r... z... on... n... An... n... r... n... z... p... r... o... z... o... r... on... z... z... n... z... or...  
n... or... z... on... p... r... o... n... p... r... z... r... on... r... r... Co... r... z... z... z... z...  
w... n... w... p... r... y... z... n... z... y... o... z... or... n... E... A...

**Planning and status information**

A... u... or... u... w... p... z... o... o... u... n... z... n... o... u... u... w... or... on... z... w... z... o...  
on... r... u... n... or... r... o... u... o... z... z... z... o... u... u... p... z... on... or... o... on... o... n... u... z... z... r...  
z... n... z... u... i... o... z... z... z... n... - F... u... r... or... p... z... n... z... n... o... n... z... z... r... o... u...  
n... x... p... z... r... o... o... z... o... or... n... o... o... z... or... u... p... p... or... n... n... r... z...  
y... z... n... o... n... or... z... on... z... o... u... u... r... x... p... z... on... z... o... u... o... z... z... or... z... p... z...  
z... n... r... q... u... n... u... r... o... o... w... p... z... n... p... r... o... u... z... For... z... u... u... r... n... z... p... z... n... n... o...  
u... z... E... E... z... z... n... p... z... u... z... z... n... on... z... n... o... p... z... o...  
z... n... p... r... o... u... w... or... z... o... z... - E... A... p... z... z... p... z... n... n... p... z... z... p... r... o... or...  
u... u... o... o... z... or... z... z... p... z... or... u... n... u... r... u... u... on... on... z... z... o... u... n... u... n... n... z...  
o... n... z... z... p... z... or... o... o... n... z... n... z... z... n... z... n... z... u... i... o...  
y... r... n... z... w... r... n... p... z... n... r... p... o... z... or... or... on... r... o... n... p... r... o... o... z... n...  
p... r... o... z... u... q... u... o... r... z... z... z... n... z... n... u... i... z... z... i... r... n...  
p... -





Appropriate on the other hand, it is not clear that appropriate to...  
... ..

## 9.5. Limitations of the thesis findings

### 9.5.1. How appropriate was the problem definition?

The problem definition is appropriate for the purpose of the study...  
... ..

The problem definition is appropriate for the purpose of the study...  
... ..



w r no o zn rzo z p n u / on n r o z z  
z o p r u o zn r or ur no pro or n r z z  
r u A r n u n ur z n z n w z z z p o z  
q u z z z w r o o q u z z q u on no z z q u on z r  
u n u z n z z p z n r z n u u D p  
pro z z x p o r z o r u x p o r n r z n u z r z n

o Uppor z r n w wor pr z o p z p z po z z  
n o z w z r z z o on p u z z o p n ow r  
z o n r o o r z n op r o z p z u z no o - n  
o z z u z or y z p n rr z Crow oo - no r z o  
n r o u on o r z o no o p r n n r - n z z o o u w z  
pro on o z q u z no o or z p z u z u z on no z p z n r n  
n r z p z on - F z on u o z p z u z no o z r or z z z  
n w on r u on o no r z p z u z z propr z z o u n  
o n n z An r n u n z - 7 - - - - -

## 9.6. Summary of chapter 9

The first part of the chapter discusses the importance of the role of the state in the development of the economy. It highlights the need for a strong and stable government to provide the necessary infrastructure and legal framework for economic growth. The second part of the chapter focuses on the role of the private sector in driving innovation and productivity. It emphasizes the importance of a competitive market environment and the need for government intervention to address market failures and ensure fair competition. The chapter concludes by discussing the challenges facing the economy and the need for a comprehensive reform agenda to address these challenges.

The second part of the chapter focuses on the role of the private sector in driving innovation and productivity. It emphasizes the importance of a competitive market environment and the need for government intervention to address market failures and ensure fair competition.

# CHAPTER 10. CONCLUSIONS

---

## 10.1. Summary of thesis

The main objective of this thesis is to study the properties of the operator  $\mathcal{L}$  defined by  $\mathcal{L}u = -\Delta u + \nabla \cdot (u \nabla \phi)$  in a domain  $\Omega \subset \mathbb{R}^n$ .

In the first chapter, we study the existence and uniqueness of solutions to the Dirichlet problem for  $\mathcal{L}u = f$  in  $\Omega$  with  $u = 0$  on  $\partial\Omega$ . We show that if  $f \in L^p(\Omega)$  and  $\phi \in C^1(\bar{\Omega})$ , then there exists a unique solution  $u \in W^{2,p}(\Omega)$  for  $1 < p < \infty$ . In the second chapter, we study the properties of the operator  $\mathcal{L}$  in the case where  $\phi$  is a harmonic function. We show that  $\mathcal{L}$  is self-adjoint and positive definite in this case.

Finally, we study the properties of the operator  $\mathcal{L}$  in the case where  $\phi$  is a non-harmonic function. We show that  $\mathcal{L}$  is not self-adjoint in this case, but it is still positive definite. We also study the properties of the operator  $\mathcal{L}$  in the case where  $\phi$  is a harmonic function and  $f \in L^p(\Omega)$  for  $1 < p < \infty$ . We show that there exists a unique solution  $u \in W^{2,p}(\Omega)$  for  $1 < p < \infty$ .





n an n un a n Co Un on  
w n or w up r. p p o non or r up  
w n a y own o n n r p o pro e n pro



o u no u z z z or n z z wor pro n z ur z u  
r z r z propo p r p on w z n o o u on n z o u w  
r p o r z n z p o o z or z wor-

**Further understanding of collaborative writing**

ur r por n n on r z z on z on r por xp r n  
o o z or n u o w r o ro w z no ow r z r n ur  
For y z p or n o r por n wr n z w r no ur Exp or n u  
u wo u z xp z or pow r o z n u q u n ur u r z n

q u z z u n w n z n pro n n o r z n pr z  
o or z z pr z z n r n C C wr n r z o n r z z

## BIBLIOGRAPHY

---

Al. Z. G. n. p. B. Z. - - . 7. - n. n. CZ. y.

B. r n. e. <sup>i</sup> 20

U.S. National Rural Cooperative Administration  
U.S. National Rural Cooperative Administration  
U.S. National Rural Cooperative Administration  
U.S. National Rural Cooperative Administration

For more information, contact the Bureau of  
Rural Cooperative Administration  
U.S. National Rural Cooperative Administration

For more information, contact the Bureau of  
Rural Cooperative Administration  
U.S. National Rural Cooperative Administration

For more information, contact the Bureau of  
Rural Cooperative Administration  
U.S. National Rural Cooperative Administration

Z -- Z -- Fow r -- Z -- n -- n -- r -- Z -- on o -- r -- n -- ro -- n  
r -- Z -- n -- r -- E -- Co n -- ro -- n -- r -- n -- Z -- r -- n  
Er -- A o -- Z -- pp --

Z -- Z -- Fow r -- r -- n -- Z -- ro -- o -- n -- Z -- U -- Z -- e --  
ne -- pp --

Z -- E -- Z -- U -- D -- o -- Con -- U -- Co -- Un -- Z -- on -- ro -- U -- o -- n -- Z --  
U -- Z -- En -- ron -- n -- n -- o -- r -- on -- on -- Z -- on --  
ro -- C -- AC -- C -- Con -- r -- n -- on -- U -- Z -- F -- or -- n -- Co -- p -- U -- n --  
AC -- w -- Yar -- Y -- pp --

Z -- E -- Z -- U -- Co -- Z -- or -- Z -- on -- Z -- Con -- ro -- Cr -- Z -- n -- Z -- U -- Z --  
no -- n -- on -- en -- r -- ro -- U -- n -- Con -- ro -- oo -- C -- C -- e -- no --  
pp --

or -- or -- or -- A -- U -- o -- AU -- or -- A -- r -- on -- w -- Ex -- r -- F -- r -- Z --  
F -- r -- on -- on --

o -- Z -- D -- Z -- n -- D -- r -- n -- Coop -- r -- on -- Cr -- Z -- on -- o -- D -- r -- n --  
oo -- Z -- no -- n -- Z -- n -- Bow -- r -- Z -- B -- no -- D -- U -- n --  
Co -- p -- U -- r -- Uppor -- Coop -- r -- or -- or -- n -- 7 -- 7 -- .77

rZU = E... G... Z... r... m o Con Z... Co Un Z on n  
Co pU r... Uppor... Coop rZ... or... r... on... p... AC... w  
Yar... Y... p...

rZU - E... Z... r... = Z... E... G... Z on p Z... Z... n... n...  
Z... Co m Z or Z on... Z... Co pU r... n... rZ... on... e... 7... p...

rZU = ... Z... r... = F... = Z... C Z on... B... Z... qU r... n... Z... Z...  
C o... n Co m Z or Z... r... n... U... Z... Co pU r... n... rZ... on... e... Z... ne... p... 7... 7

ZU = Z... U... Z... --... --... U... n... FZ... o... r... A... U... o... n... r... U... Z... on...  
o... Z... U... o... n... e... p...

Z... -... Z on Z... A... U... p... on... n... Cro... Z... Co pZ... on... o... Co pU r... Z... Z...  
Co... Un... Z on... B... Z... oU r... n... or... Z on... no... o... e... ne... p... 7

Z... = Z... p... Z... -... Co pU r... Z... Co... Un... Z on... D... p... U... Z on... Z...  
roUp D... on... Z... n... n... Z... Z... n... U... e... ne... p...

Z... - D... F... - = Z... rZU - E... Co m Z or Z... Do U... n... ro... U... on... n...  
U... n... C... C... ro... n... o... Con r... n... on... Co pU r... Uppor...  
Coop rZ... or... or... r... on... p... AC... w... Yar... Y... p...

Un... or... A... Z... E... -... n... U... Z... y... U... r... Z... AU... or... r... p... on... Co m Z or Z...  
r... n... oU... m... no... n... r... r... C... Z on... Z... Z... E... w... Z... U...

U... n... = Z... / on... --... --... rE... A... Z... E... ron... or... pZ... C...  
n... Z... por... ne... Co n... n... Z... Z... n... n... n... Z... or... Z or...  
n... r... o... Z... A...

Z... Z... - E... r... Z... C... U... o... Z... / o... w... Z... A... Co... A... Z... no... non... - D...  
Z... Z... U... n... U... o... no... A...

Z on... F... no... no... rZ... - D... r... n... Con... p... on... o... or... Aro... U... n...  
n... rU... on... Z... n... e... p... 7... 7

Z... = Z... Z... = B... E... Z... A... Z... Z... A... -... Co pU r... Uppor...  
D... U... on... Z... Anne... Z... o... E... Co... Z... oh... r... r... U... n... Z... Z... Z... e... ne...  
p... 7

U... w... r... G... = C... Z... o... = o... 7... 7... Z... Z... - Z... D...



rr - E Zō Crow ad - G - D n An U o E no rō o U  
App Z on o noo o rō n ro DG pōr D n  
Con r n Cā r rē pē 7

Z on = Zō EA Con n o o n B n B = Zō o Z E  
o or Con p Zō Z w Yor pē A Zō  
ro Z on = Zō EA ow Zō n rō or o A on Z Z  
n r r Cā r rē Z pē

on - E Urn r B A Zō Bio D o ro U n or or  
Con p U Z An Z n now E Z on n - Zō Z n U e  
pē 7-

ow Zō - Z n Zō wr n Z o o o n Z pro Z o Z n Z ro U p wr n  
Z Co Z or Z r n Z ro p Z r C ne o o o Co n  
Zō Co p U n n n r o U

ow Zō - rō n E o U on o Z Co A U or x Zō U Z  
Co U n Z on e ne pē

ow Zō - o B n r A rō Z Appro Z o or p Z U  
Unp U Zō r p p o on pō r or wor op on Appro Z o wor Zō  
or C C n Z C C Con r n on Co p U r U ppor  
Coop rō ar C Zō G

o nr - A U o Co Z or Z r n rō n n r o  
oron o C Z Z

o nr - Zō B Z r - ow p op r wr o r n B Z r  
Z n n ro U p w Zō Zō Co p U r U ppor Coop rō or A n U Zō  
U Zō Co Z or Z on or Zō Zō Zō Zō CA pē

r D - o m Z n B n Co U Z n r r

r - A Zō p o r D r n Z Co Z or Z on Co U En e ne  
pē 7

r p Zō on o Z n n r E U Z on A U o r p Zō on  
o Z n Z r Zō p n n r D n r o U  
n r

r Zō - Co Z or Z r n rō Zō r n U ppor noo  
n U on Z n e no pē

o n on = Zō B Z non - U on n pr n Z on n B Z non = o n on  
= Zō EC C ro n o on E U rop Zō  
Con r n on Co p U r U ppor Coop rō or A rō 7 p  
U r D o r pē on = Zō Zō - A Zō B Z r  
U ppor n Coop rō App Z on - C C e ne pē 7

o r Y - o n wor D r U ro U o o n n Zō Zō or n  
En ron n n Urn r = Zō rō C C ro n o  
Con r n on Co p U r U ppor Coop rō or oron o AC  
w Yar Y pē

o r = Zō or on - Exp on Zō o F Z o E Z Co Z or Z  
r n n For Zō w on o Co Z or Z r n Bo n on Co  
n Zō or o U pē

Uppor or Com... AU or n...  
En ron... EC C... ro... o... EUrop... Con r n on  
Co p... r... Uppor... Coop r... ar... 7... p... U... Dor...  
pp...

B... n... C C... ro... Uppor... Ar... U... on... or...  
C C... e... ne... pp... 7...

o E no r... Co... n... o... n... or C C... o  
Co p... r... Uppor... Coop r... ar...  
C... AC... w Yar... Y... pp... 7...

A... n... r... U... o... Com... or... r... n... n... D...  
C C... n... r... An... n... o... on... Co... U... pr... r...  
r... on... on... pp... 7...

n... r... o... on... n... Co p... r... Uppor... Com... or...  
r... n... pr... r... r... on... on... pp... 7...

B... E... o... G... E... r... ro... =... =...  
U... n... U... o... Co p... r... Uppor... Com... or... r... n... n...  
Co p... r... Uppor... Com... or... r... n... pr... r... r...  
on... on... pp... 7...

r... on... pr... n... n... r... n... An A... o... n... o... r... n...  
Ex... r... pr... n... on... Co... n... n...  
C... ne... o... o... Co... n... Co... p... n... n...  
n... r... o... U... x...

An... r... on... B... E... no... o... o... E... or... wo...  
C...

w... or... r... y... or... En... D... on... on... y... or... n... r...  
r... y... or...

ro... Door... r... on... ar... p... n... B... Boy...  
r... e... ne... pp... 7...

Coop r... on... o... U... Con... n... U... n... n... ro... o... n... D... n... o...  
Co... r... n... p... n... n... E... r... ro... C... C... Coop r... on... or... Con...  
pr... r... r... on... on... pp... 7...

A... or... D... on... o... ar... o... o... U... U... e... ne...  
pp... 7...

A... 7... U... An... or... o... n... C... r... n... r... r...  
C... r...

A... Cor... n... B... o... U... r... r... ro... n... or...  
ro... ur... n... n... q... w... ur... CA...

E... A... A... Coop r... p... r... AU... or... n... En... ron... n... n... ro... EC...  
AC... Con... r... n... on... p... r... x... o... D... pp... 7...

A... 7... U... A... on... ro... o... U... n... n...  
Co... U... n... on... C... r... n... r... r... C... r...

u      ~~Z~~ -      ~~Fro~~      ~~ro~~ ~~r~~ ~~C~~ ~~Z~~ ~~pr~~ ~~Z~~ ~~n~~ ~~C~~ ~~C~~      ~~ro~~ ~~in~~ ~~o~~  
Con r n      on Co p      r      ppor      Coop r      or      or      r      or      p

# LIST OF APPENDICES

---

## A. Further detail on empirical work:

A.1. The role of quality of institutions in the growth of the private sector in the work-

A.2. The role of quality of institutions in the growth of the private sector in the work-

A.3. The role of quality of institutions in the growth of the private sector in the work-

A.4. The role of quality of institutions in the growth of the private sector in the work-

A.5. The role of quality of institutions in the growth of the private sector in the work-

A.6. The role of quality of institutions in the growth of the private sector in the work-

A.7. The role of quality of institutions in the growth of the private sector in the work-

A.8. The role of quality of institutions in the growth of the private sector in the work-

## Appendix B. Publications drawn on in thesis:

B.1. B.1.1. The role of quality of institutions in the growth of the private sector in the work-

B.1. B.1.2. The role of quality of institutions in the growth of the private sector in the work-

B.1. B.1.3. The role of quality of institutions in the growth of the private sector in the work-

B.1. B.1.4. The role of quality of institutions in the growth of the private sector in the work-